

FUTURE SCIENCE FICTION

1956

NO. 29

35¢

VULCAN'S HAMMER

by PHILIP
K. DICK



SPRAGUE de CAMP

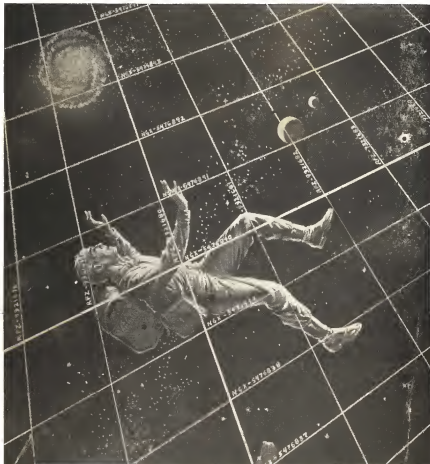
RANDALL GARRETT

RICHARD WILSON

WALLACE WEST

and others

TOMORROW'S INTERPLANETARY TRAVELLER—SPACE TRANSFER



Careful computations must be made, lest our spaceshipless voyager materializes in the depths of space, or miles above the planet, or beneath the surface. For fuller details, see "The Spaceman's Van Gogh," by Clifford D. Simak, in the March, 1956 issue of *Science Fiction Stories*.



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It was a rational world, a world without war, a world ruled by the logic of Vulcan III, the greatest of computers. But hatred and rebellion was there, too; and for some strange reason, no directives seemed to be coming forth as to what could be done about the Healers.

NOVEL

VULCAN'S HAMMER

by Philip K. Dick

Illustrated by Kelly Freas

PITT WAS conscious of the mob as soon as he left the Unity office and started across the street. He stopped at the corner by his car and lit a cigaret. Unlocking the car, he studied the mob, holding his briefcase tightly.

There were fifty or sixty of them: People of the town; workers and small businessmen; petty clerks with steel-rimmed glasses. Mechanics and truckdrivers; farmers; housewives; a white-

aproned grocer. The usual — lower middle-class; always the same.

Pitt slid into his car and snapped on the dashboard mike. "Emergency." They were moving fast, now, filling up the street and surging silently toward him. They had, no doubt, identified him by his T-class clothes — white shirt and tie, gray suit, felt hat. Briefcase. The shine of his black shoes. The pencil beam gleaming in the breast pocket of



his coat. He unclipped the gold tube and held it ready.

"Cartwright," the dashboard speaker said.

"This is Pitt."

"Where are you?"

"Still in Cedar Groves. There's a mob forming all around me. I suppose they have the roads blocked. Looks like the whole damn town."

"Any Healers?"

OFF TO one side, on the curb, stood an old man with a massive head and short-cropped hair. Standing quietly in his drab brown robe, a knotted rope around his waist, sandals on his feet. "One," Pitt said.

"Try to get a scan for *Vulcan III*."

"I'll try." The mob was all around the car, now. Pitt could hear their hands, plucking and feeling at the car, exploring it carefully — with calm efficiency. He leaned back and double-locked the doors. The windows were rolled up; the hood was down tight. He snapped on the motor. On the curb, the man in brown had not moved. He stood with a few others, people in ordinary street clothing. Pitt pulled the scanner out and lifted it up.

A rock hit the side of the car below the window; the car shuddered. A second rock hit directly against the window, sending a web of cracks rippling across it.

Pitt dropped the scanner. "I'm

going to need help. They mean business."

"There's a crew already on the way. Try to get a better scan of him. We didn't get it well."

PITT GRINNED bleakly. One of the back windows had cracked; hands groped blindly into the car. "I've got to get out of here, Cartwright."

"Don't get panicky."

"Keep the old brain down?"

Pitt released the brake. The car moved forward a few feet — and stopped dead. The motor died into silence. Cold fear slid through Pitt's stomach. He fingered his pencil beam nervously. Four or five men were astride the hood, cutting off his view; others were on the cabin above his head. A sudden shuddering roar: They were cutting through the roof with a heat drill.

"How long?" Pitt muttered thickly. "I'm stalled."

"They'll be along any minute."

"They better hurry." The car shuddered as a whole barrage of rocks hit. The car tipped ominously; they were lifting it up on one side, trying to overturn it. Both back windows were out. A man's hand reached for the door release.

Pitt burned the hand to ash with his pencil beam. The stump hastily withdrew. "I got one."

"If you could scan some of them for us —"

More hands appeared. The interior of the car was sweltering; the heat drill was almost through. "I hate to do this." Pitt turned his pencil beam on his briefcase until there was nothing left. Hastily, he dissolved the contents of his pockets, everything in the glove compartment, his identification papers, and finally he burned his wallet.

"Here they come," he said softly, as the whole side of the cabin crumpled with a hoarse groan and slid aside under the pressure of the drill.

"Try to hang on, Pitt. The crew should be there almost any . . ."

ABRUPTLY THE speaker went dead. Faces mooned up before him. Hard faces, like stone, pushing around him. Growing. Pale white mushrooms on all sides. Pitt shoved down a scream. He turned the pencil beam at random, burning faces and hands; the air reeked with acrid fumes.

Hands caught him, throwing him back against the seat. His coat ripped, tie pulled off. He screamed. A rock crashed into his face; the pencil fell to the floor. A broken bottle cut across his eyes and mouth. His scream bubbled into choked silence. The bodies scrambled over him. He sank down, lost in the clutching mass of warm-smelling humanity.

Off down the highway the sirens of the police crew shrieked mournfully.

WILLIAM BARRIS examined the photo carefully. On his desk his coffee cooled into muddy scum, forgotten among his papers. The Unity building rang and vibrated with the sounds of endless calculators, statistics machines, vidphones, teletypes, electric typewriters, and filing equipment. Clerks and officials moved expertly back and forth in the labyrinth of offices, the countless cells in which T-class men worked.

"This face is unusual," Barris murmured; "look at his eyes, and the heavy ridge over the brows."

"Phrenology," Cartwright said indifferently.

Barris threw down the photo. "No wonder they get so many followers. With organizers like that —" He handed the photo back to Cartwright. "What's his name?"

"Father Fields." Cartwright thumbed through his file. "Fifty-nine years old. Trade: electrician. Top-grade turret wiring expert. One of the best during the War. Born in Macon, Georgia, 1970. Joined the Healers two years ago — at the beginning. One of the founders. Spent two months on the Atlanta Psychological Correction Labs. Escaped, disappeared — Without treatment." Cartwright returned the photo to the

file. "First time we've heard anything about him since then."

"Did you know Pitt?"

"A little." Cartwright got to his feet. "The call is out for Father Fields; it's been out for months."

"Too bad the police showed up late. Always a few minutes late." Barris studied Cartwright. "Odd, isn't it?"

Cartwright shrugged. "When a whole town's organized against you, it isn't. They blocked the roads, cut wires and cables, jammed the vidphone channels."

"If you get Father Fields send him in to me. I want to examine him personally."

CARTWRIGHT SMILED thinly. "Sure. But I doubt if we'll get him." He yawned and moved toward the door. "It's unlikely; he's a slick one."

"What do you know about this?" Barris demanded.

Cartwright laughed. "Don't ask me, ask *Vulcan III*; that's what it's for."

Barris' eyes flickered. "You know *Vulcan III* has given no statement in over fifteen months."

"Maybe it doesn't know." Cartwright opened the door to the hall; his police bodyguard swarmed around him. "I can tell you one thing. The Healers are after one thing and one thing only; everything else is talk — all this stuff about their wanting to

destroy society and wreck civilization."

"What are they really after?"

"They want to smash *Vulcan III*; they want to strew its parts over the whole countryside. All this today, Pitt's death, the rest — they're trying to reach *Vulcan III*."

"Pitt burned his papers?"

"I suppose. We found nothing, no remains of him or any of his equipment."

THE DOOR closed. Barris clicked on his closed-circuit vid-sender. The local Unity monitor appeared. "Give me Unity Control at Geneva."

He stirred his coffee absently. Father Fields. The heavy face. Thick eyebrows. A man who had once wired up electrical circuits in T-class installations. He might have seen him, even employed him. And if not Fields, then others of the Movement. Mechanics, plumbers, carpenters, butlers, waiters. Any of the drab army of lower-class people who came and went, unnoticed and invisible.

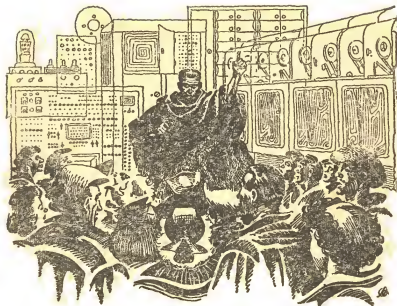
The vidphone clicked. "Unity Control."

"This is North American Director Barris. I wish to put through an Emergency request to *Vulcan III*."

"Any first-order data to offer?"

"Nothing not already filed."

"Then you'll have to put through your request in the usual



way." The Geneva monitor consulted a sheet. "The delay period is now three days."

"What's *Vulcan III* doing? Working out chess openings?"

"I'm sorry, Mr. Barris. The time lag can't be cut even for Director level personnel."

"Let me talk to Jason Dill, then."

"Managing Director Dill is in conference. He can't be disturbed."

BARRIS CUT the circuit savagely; the screen died. Three days! The eternal bureaucracy of the monster-organization. Barris sipped some cold coffee and then angrily poured the cup out. The

pot refilled it quickly with fresh coffee. Didn't *Vulcan III* give a damn? Maybe it wasn't concerned with the Movement, the world-wide revolution out — as Cartwright said — to smash its metal hide and strew its relays and memory tubes and wiring for the crows to pick over.

But it wasn't *Vulcan III*, of course; it was the organization, the Unity system — the endless officials and managers, clerks and experts and statisticians and Directors. And Jason Dill. Was Dill deliberately isolating the other Directors, cutting them off from *Vulcan III*? Maybe *Vulcan III* had responded and the information had been withheld.

Barris selected a request form and wrote out his questions slowly, studying each word. The form gave him space for ten questions; he asked only two.

a) ARE THE HEALERS OF REAL SIGNIFICANCE?

b) WHY DON'T YOU RESPOND TO THEIR EXISTENCE?

Barris pushed the form into the relay slot and listened as the scanner clicked over its surface. Thousands of miles away, his questions joined the vast tide, flowing in from all over the world, from the Unity offices in every country. Twenty-three Directorates — divisions of the planet. Each with its Director and staff and Sub-directorate Unity offices. The world-wide control organization that operated the planet, the vast hierarchy that culminated in the twenty-three Directors and at the peak — *Vulcan III*.

In three days, Barris' turn would come and answers would flow back. His questions, processed by the elaborate bureaucratic structure, would eventually be answered. As with everyone else in T-class, he submitted all problems of importance to the huge mechanical computer buried somewhere in the subsurface fortress near Switzerland.

He had no other choice. All policy level matters were determined by *Vulcan III*; that was the law.

"WHAT DOES the year 1992 bring to mind?" Agnes Parker asked, looking around the classroom brightly.

"The year 1992 brings to mind the conclusion of the First Atomic War and the beginning of the decade of international regulation," said Peter Thomas.

"Unity came into being," Patricia Edwards added. "Rational world order."

Mrs. Parker made a note on her chart. "Correct. And now perhaps someone can tell me about the Lisbon Laws of 1993."

The classroom was silent. A few pupils shuffled in their seats; outside, warm June air beat against the window. A fat robin hopped down from a branch and stood listening for worms. The trees rustled lazily.

"That's when *Vulcan III* was made," Hans Stein said.

MRS. PARKER smiled. "*Vulcan III* was made long before that; *Vulcan III* was made during the War. *Vulcan I* in 1960. *Vulcan II* in 1975. They had computers even before the War, in the middle of the century. The *Vulcan* series was developed by Otto Jordani, who worked with Nathaniel Greenstreet for Westinghouse, during the early days of the War . . ."

Mrs. Parker's voice trailed off into a yawn. She pulled herself together with an effort; this was no time to be dozing. Managing

Director Jason Dill and his staff were supposed to be in the school somewhere, reviewing educational ideology. *Vulcan III* was rumored to have made inquiries concerning the various value biases the school systems had formulated in their basic orientation programs.

"What," Mrs. Parker repeated, "were the Lisbon Laws of 1993? Doesn't anybody know?"

For a moment there was no response. The rows of faces were blank. Then, abruptly, incredibly — "The Lisbon Laws dethroned God," a piping child's voice came, from the back of the classroom. A girl's calm voice, severe and penetrating.

Mrs. Parker awoke from her torpor. She blinked in amazement. "Who said that?" she demanded. The class buzzed. Heads turned questioningly toward the back. "Who was that?"

"It was Jeannie Baker!" a boy hollered.

"It was not! It was Dorothy!"

MRS. PARKER got quickly to her feet. "The Lisbon Laws of 1993," she said sharply, "were the most important legislation of the past five hundred years." She spoke nervously, rapidly; gradually the class turned toward her. "All seventy nations of the world sent representatives to Lisbon. The world-wide Unity organization formally agreed that the great computer machines devel-

oped by Britain and the United States, and hitherto used in a purely advisory capacity, would now be given absolute power over the national governments in the determination of top-level policy. This decision to transfer ultimate authority from the thalamic-distorted minds of humans to the totally rational and realistically-oriented mind of a computer, totally free of bias —"

But at that moment Managing Director Jason Dill entered the classroom, and Mrs. Parker lapsed into respectful silence. Jason Dill was an energetic middle-aged man with a shrewd face, twinkling eyes, and a genial smile of confidence. His staff entered with him, three men and two women, all in the business-like T-class gray. The children gazed up in wonder, everything else forgotten.

"This is Managing Director Dill," Mrs. Parker said, "the Coordinating Director of the Unity system." Her voice broke with awe. "Managing Director Dill is responsible only to *Vulcan III*. No human being except Director Dill is permitted to approach the computer banks."

DIRECTOR DILL nodded genially at Mrs. Parker and at the class. "What are you children studying?" he asked, in a friendly voice, the rich voice of a competent leader of the T-class.

The children shuffled shyly. "History," a boy said.

"History? Modern or comparative?"

"Modern."

"What did you learn today?"

"We learned about the Lisbon Laws," a voice said.

"That's nice," Director Dill affirmed heartily, his alert eyes twinkling. He nodded to his staff and they moved back toward the door. "You children be good students and do what your teacher tells you."

"Mr. Dill," a girl's voice came. "Can I ask you something?"

The room became abruptly silent. Mrs. Parker was chilled. *The voice.* The girl again. Who was it? Which one? She strained to see, her heart thumping in terror. Good Lord, was the little devil going to say something in front of Director Dill?

"Certainly," Dill said, halting briefly at the door. "What do you want to ask?" He glanced at his wristwatch, smiling rather fixedly.

"Director Dill is in a hurry," Mrs. Parker managed to say. "He has so much to do, so many tasks; I think we had better let him go, don't you?"

But the firm little child's voice continued, as inflexible as steel. "Director Dill, don't you feel ashamed of yourself when you let a machine tell you what to do?"

DIRECTOR DILL's fixed smile remained. Slowly, he turned away from the door, back toward the class. His bright, shrewd eyes roved about the room, seeking to pinpoint the questioner. "Who asked that?" he inquired pleasantly.

Silence.

Director Dill moved about the room, walking slowly, his hands in his pockets. He rubbed his chin, plucking at it absently. No one moved or spoke; Mrs. Parker and the Unity staff stood frozen in horrified immobility. Even the children were hushed. Something was happening, something was going on, strange and terrible. A cold wind, alien and ominous, blowing around them from the icy outside.

But Director Dill was unshaken. He stopped in front of the blackboard. Experimentally, he raised his hand and moved it in a figure. White lines traced themselves on the dark surface. He made a few thoughtful motions and the date 1992 traced itself.

"The end of the War," he stated.

HE TRACED 1993 for the hushed class. "The Lisbon Laws, which you're learning about. The year the combined nations of the world decided to throw in their lot together. To subordinate themselves, their national interests, to a common supranational

authority, for the good of all mankind."

Director Dill moved away from the blackboard, gazing thoughtfully down at the floor. "The War had just ended; most of the planet was in ruins. Something drastic had to be done, because another war would destroy mankind. Something, some ultimate principle of organization, was needed. International control. Law, which no men or nations could break. Guardians were needed.

"But who would watch the Guardians? How could we be sure this supranational body would be free of the hate and bias, the animal passions that had set man against man, throughout the centuries? Wouldn't this body, like all other man-made bodies, fall heir to the same vices, the same failings of interest over reason, emotion over logic?

"There was one answer: For years we had been using computers, giant machines constructed by hundreds of trained experts, built to exact standards. Machines were free of the poisoning bias of self-interest and feeling that gnawed at man — Capable of performing the objective calculations that for man would remain only an ideal, never a reality. If nations would be willing to give up their sovereignty, to subordinate their power to the objective, impartial directives of the —"

A GAIN THE thin child's voice cut through Dill's confident tones. "Mr. Dill, do you really believe that a machine is better than a man? That man can't manage his own world?"

Jason Dill's cheeks glowed. He gaped in anger and baffled amazement, his careful speech deflated like a toy balloon. "Who are you?" he demanded hoarsely. "What's your name?" He pointed at the class, down the center, at a small red-haired girl sitting quietly in the back. "You there! What's your name?"

The girl gazed calmly back at him, her small hands folded together on her desk. "Marion Fields," she said clearly. "And you haven't answered *my* question."

II

THE UNITY CONTROL building filled virtually the whole business area of Geneva, a great imposing square of white concrete and steel. Its endless rows of windows glittered in the late afternoon sun; lawns and shrubs surrounded the structure on all sides; gray-clad men and women hurried up the wide marble steps and through the doors. The hum of calculating and filing machinery could be heard always, a controlled sound, pleasant and efficient, like the gentle murmur of a great hive of bees.

Jason Dill's car pulled up at the guarded Directors' entrance. He stepped quickly out and held the door open. "Come along," he ordered.

Marion Fields slid slowly from the car onto the pavement. "Why?"

Dill led her quickly up the steps and into the great building. The long echoing hall stretched out ahead of them, lit by recessed lights. Distant figures, tiny human shapes, scampered back and forth from one office to another. "This way," Dill said, turning down a side passage.

He entered his office, guiding the girl ahead of him. "I want to go home," Marion Fields muttered.

DILL CROSSED to his massive desk and glanced at the heap of reports. "Sit down." He seated himself behind the desk, folded his hands and studied the girl intently.

"What do you want?" Marion demanded.

"How old are you?"

"Nine."

"Who told you to say that about Unity? Who taught you?"

"Nobody taught me."

By Dill's hand the vidtape hummed as it recorded the girl's image and words. Framed on his desk scanner was the police report. Marion Fields was a ward of the Government, since the arrest of her father and his com-



mission to a Psych Correction home in the United States. A check mark indicated he had escaped and not yet been recovered.

"What was your father arrested for?" Dill demanded.

The girl's lips clamped sullenly together. "I don't know."

"The Healers. What's your father's relation to them?"

"I don't know."

Dill leaned back in his chair. "Isn't it a little silly, those things you said? Overthrowing God . . . Somebody has told you we were better off in the old days — before Unity, when we had national states and war every twenty years." He considered. "How did the Healers get their name?"

"I don't know."

"Didn't your father tell you?"

"No."

"**I** CAN TELL you. They're taking advantage of the superstitions of the masses. The masses are ignorant, you see. There is a mass-mind we're dealing with, here — not like yours or mine. You understand? They can't think — not the way we do. They believe in crazy things: Magic; Gods and miracles; healing; the touch. This group is playing on basic emotional hysterias familiar to all our sociologists, manipulating the masses like sheep, using them to gain power. The masses have a desire for religious certainty, the comforting balm

of faith. You understand what I'm saying?"

Marion nodded faintly.

"They don't live by reason. They can't; they haven't the courage and discipline to live by anything but emotion. They demand the metaphysical absolutes an emotional, non-rational faith offers. Reason involves tentative rather than absolute hypotheses, subject to constant revision and change in the face of new facts. This introduces elements of uncertainty, and the mass-mind cannot tolerate any kind of uncertainty; they must have absolutes."

"Can I go, now?" Marion asked.

"What are the Healers trying to do? What are they after?"

MARION SAID nothing, and Jason Dill slid a report at her. "Read this! It's about a man named Pitt — Robin Pitt, in American. Ever hear of him?"

"No."

"He was killed this morning, killed by a mob." Dill pushed the report impatiently toward her. "Go on; read it."

Marion took the report and examined it, her lips moving slowly.

"The mob," Dill said, "was led by your father. You understand that? This man was brutally murdered as he started to drive off in his car. The mob pulled him out of the car and tore him

to bits. What do you think of that?"

Marion returned the report without comment.

"Are you proud of your father? Assassins!" Dill grabbed the report and restored it to the pile on his desk. "These other reports — more murders, all over the world. Every day men killed, beaten-up, robbed, by mobs of insane idiots, incited by these Healers. By your own father. Do you approve? You think that's good?"

Marion shrugged.

"AN OUTFIT of assassins, stirring up uneducated people, rural simpletons." Dill leaned toward the girl. "Why? What are they after? Do they want to bring back the old days — war and hatred and international violence? The old brain is waking again; the beast — all over the world. These madmen are sweeping us back into the chaos and darkness of the past, back to the days when men were beasts. Are you proud of your father for bringing back the beast? You want this killing and violence to sweep everything else away?"

"No."

"What, then? What's it all for? What the hell are they after?"

"They want *Vulvan III*."

"They're trying to find it?" Dill gestured angrily. "They're

wasting their time. It repairs and maintains itself; we merely feed it data and the parts and supplies it wants. Nobody knows where it is; Pitt didn't know."

"You know."

"Yes; I know. So they want to destroy *Vulcan III*. Then Unity will dissolve and there'll be national states, seventy countries, each with its own language and customs and hatred. Wars again. The old world, back with us."

"So man won't be a slave to a machine."

"Who taught you to say that?"

"Nobody."

"IT'S INSANE! We're not slaves; it's for our own sake that we keep Unity, so we'll be governed rationally — not by animal passion. Emotion is destructive; you can't build a society on it. It tears down, breaks and plunders. Puts an end to law." Dill got abruptly to his feet. "Why did they destroy *Vulcan II*?"

Marion blinked. "*Vulcan II*? The old computer?"

Dill's face hardened instantly. "Forget it." He paced back and forth. "Possibly you don't know about that. Are you in touch with your father?"

"No."

"Do you know where he is?"

"No."

"Too bad. I'd like to talk to him. He's quite important in the Movement, isn't he?"

Marion said nothing.

"Maybe he's the head of it; I don't know." Dill ran his hands nervously through his gray hair. "You'll stay here in the Unity offices, of course; I'll see you again later on." He stabbed a button on his desk and two armed Unity guards appeared at the door. "Take this girl down to the third subsurface level; don't let anything happen to her."

The guards moved around Marion Fields and she went with them sullenly. Dill watched them go, standing moodily at his desk until the doors slid back in place.

Then he left the Unity Control building, hurrying up the ramp to the confined field, past the nests of heavy-duty aerial guns, to his own private hangar.

A few minutes later he was heading across the early evening sky, toward the underground fortress where the great *Vulcan* computers were maintained, carefully hidden away from the race of man.

HE LANDED and submitted to the elaborate examination at the surface check-point, fidgeting impatiently. The tangle of equipment sent him on and he descended quickly into the depths of the underground fortress. At the second level he stopped the elevator and got abruptly off. A moment later he was standing before a sealed support-wall, tap-

ping his foot nervously and waiting for the guards to pass him.

"All right, Mr. Dill." The wall slid back. Dill hurried down a long deserted corridor, his heels echoing mournfully. The air was clammy, and the lights flickered fitfully; he turned to the right and halted, peering into the yellow gloom.

There it was. *Vulcan II*, or what remained of *Vulcan II* — heaps of twisted debris; fused, wrecked masses of parts; scattered tubes and relays lost in random coils that had once been wiring. A great dusty ruin, silent and forgotten.

IT MADE HIM feel strange to see this, the remains of the once-great computer. Dill could remember the old days, before *Vulcan III* had been built — the days when *Vulcan II* had been their pride and joy. There were few in the Unity system who remembered those days. The bright young men had pushed the old ones out of the way — as *Vulcan III* had pushed *Vulcan II* aside. This devastated wreck had been their hope, once. In the old days, during the War, *Vulcan II* had been an intricate structure of great delicacy and subtlety, an elaborate instrument consulted by the Unity heads daily.

He kicked a shapeless blob of ash with his foot. The change, the incredible change from the thing *Vulcan II* had been to *this*,

still dazed him. Again, for the millionth time, the question scurried hopelessly through his brain. *How had it happened? How had they got in? And — why?*

It didn't make sense. *Vulcan II* was no longer in use — not since *Vulcan III* had come into being. If they had entered the fortress, if one of them had penetrated this far, why had they wasted their time *here* — with *Vulcan III* situated only six levels below?

MAYBE THEY had made a mistake; maybe they had destroyed the smaller computer, this discarded machine, thinking it was *Vulcan III*. Perhaps it had been an error.

— And perhaps not; maybe there was a reason. Fifteen months ago it had happened: The sudden attack; the horrifying assault in the middle of the night; and then this, twisted wreckage — nothing more. A careful, systematic smashing of everything vital. The whole wiring maze crushed, bludgeoned out of existence.

It had happened without warning. Dill had taken a series of questions to *Vulcan II* that afternoon. Secretly, by himself, he had still consulted the discarded computer — when he had questions simple enough for him to consider. He fed the questions; answers came. He carried off the

tapes in his pocket. And then, that night, the blast.

Dill tapped his coat. They were still there — the answers *Vulcan II* had given him, answers he had puzzled over, again and again. He had intended to ask for clarification, but the blast had ended that.

Deep in thought, Dill left the room and returned to the elevator. He descended to the lowest level and came out before a complex series of check points. Armed guards waited to pass him into the central chambers where the great computer *Vulcan III* waited silently to question him.

HE DETOURED long enough to examine the DQ forms that had come in. Larson, the leader of the data-feed team, showed him the rejects.

"Look at these." Larson carefully laid out a handful of forms. "This one here; maybe you better turn it back personally, so there won't be any trouble."

The form was from the North American Director, William Barris. It asked two questions.

a) ARE THE HEALERS OF REAL SIGNIFICANCE?

b) WHY DON'T YOU RESPOND TO THEIR EXISTENCE?

Dill scowled; Barris again. One of the eternal bright young men — climbing rapidly up the Unity ladder. Barris, Reynolds, Henderson — making their way

confidently, efficiently, toward the position of Managing Director. "Very many DQs like this?"

"No, sir, but there is a general increase in tension; several Directors beside Barris are wondering why *Vulcan III* gives no pronouncement on the Movement."

"Let me see the rest of the material."

Larson passed him the remaining DQ forms. "And here's the related matter from the data troughs." Larson passed over a huge sealed container. "We've weeded all the oncoming material carefully."

"You're sure nothing connected with the Healers has reached *Vulcan III*?"

"None that we know of."

DILL SCRATCHED a few lines on the bottom of Barris' DQ form. "Return this to him toward the end of the week. He failed to fill in his identification numbers; I'm returning it to be corrected."

Larson frowned. "That won't delay the problem much. Barris will immediately return the form correctly prepared. What are you going to do when there are no technical errors to fall back on? Sooner or later Barris and the others are going to realize someone is deliberately holding their DQ forms back."

"It's not the Directors I'm worried about," Dill said, half

to himself. "If *Vulcan III* discovers I've been suppressing certain data and questions . . ."

"Why?" Larson demanded. "Why the hell are you doing this? What's the purpose of holding information back from him?"

"That's my concern." Dill's face hardened dangerously. "Do as you're told, and don't ask questions."

"My team is taking enormous risks; the ultimate blame is apt to fall on us. We're working under your orders without knowing what this is all for."

"Sometimes you have to work without understanding." Dill turned abruptly toward the guarded inner doors. "Open up and let me in; I'm late as it is."

Larson shrugged. "All right, Director." He touched a stud and the doors slid back.

DILL ENTERED the great chamber and the doors filled in behind him; he was alone with *Vulcan III*. The huge calculator rose in front of him, the immense mass of parts and indicators.

Vulcan III was aware of him. Across the vast impersonal face of metal an acknowledgment gleamed, a ribbon of fluid letters that appeared briefly and then vanished.

IS THE EDUCATIONAL BIAS SURVEY COMPLETE?

"Almost," Dill said. "A few more days."

I NEED IT AT ONCE.

"It'll be along as soon as the feed teams can turn it into data form."

Vulcan III was — well, the only word was agitated. Power lines glowed red — the origin of the series' name. The rumbling and dull flashes of red had reminded Nathaniel Greenstreet of the ancient God's forge, the lame god who had forged the thunderbolts for Zeus, in an age long past.

THERE IS SOME ELEMENT MISFUNCTIONING. A SIGNIFICANT SHIFT IN THE ORIENTATION OF CERTAIN SOCIAL CLASSES WHICH CAN NOT BE EXPLAINED IN TERMS OF DATA ALREADY AVAILABLE TO ME. A REALIGNMENT OF THE SOCIAL PYRAMID IS FORMING IN RESPONSE TO HISTORIC-DYNAMIC FACTORS UNFAMILIAR TO ME. I MUST KNOW MORE IF I AM TO DEAL WITH THIS.

A FAINT tendril of alarm moved through Dill. Did *Vulcan III* suspect? "All data is made available to you as soon as possible."

A DECIDED BIFURCATION OF SOCIETY SEEMS IN THE MAKING. BE CERTAIN YOUR REPORT ON EDUCATIONAL BIAS IS COMPLETE. I WILL NEED ALL THE RELEVANT FACTS.

After a pause *Vulcan III* added: I SENSE A RAPIDLY APPROACHING CRISIS.

"What kind of crisis?" Dill demanded nervously.

IDEOLOGICAL. A NEW ORIENTATION APPEARS TO BE ON THE VERGE OF VERBALIZATION. A GESTALT DERIVED FROM THE EXPERIENCE OF THE LOWEST CLASSES. REFLECTING THEIR DISSATISFACTION.

"Dissatisfaction? With what?"

ESSENTIALLY, THE MASSES REJECT THE CONCEPT OF STABILITY. IN THE MAIN, THOSE WITHOUT SUFFICIENT PROPERTY TO BE FIRMLY ROOTED ARE MORE CONCERNED WITH GAIN THAN WITH SECURITY. TO THEM, SOCIETY IS AN ADVENTURE. A STRUCTURE IN WHICH THEY HOPE TO RISE TO A SUPERIOR POWER POSITION. A RATIONALLY CONTROLLED STABLE SOCIETY SUCH AS OURS DEFEATS THEIR DESIRES. IN A RAPIDLY ALTERING UNSTABLE SOCIETY THE LOWEST CLASSES WOULD STAND A GOOD CHANCE TO SEIZE POWER. BASICALLY, THE LOWEST CLASSES ARE ADVENTURERS, CONCEIVING LIFE AS A GAMBLE, A GAME, RATHER THAN A TASK, WITH SOCIAL POWER AS THE STAKES.

"Interesting," Dill murmured uneasily.

THE DISSATISFACTION OF THE MASSES IS NOT BASED ON ECONOMIC DEPRIVATION BUT ON A SENSE OF INEFFECTUALITY. NOT AN INCREASED STANDARD OF LIVING, BUT MORE SOCIAL POWER, IS THEIR FUNDAMENTAL GOAL. BECAUSE OF THEIR EMOTIONAL ORIENTATION THEY ARISE AND ACT WHEN A POWERFUL LEADER-FIGURE CAN COORDINATE THEM INTO A FUNCTIONING UNIT RATHER THAN A CHAOTIC MASS OF UNFORMED ELEMENTS.

DILL WAS silent. It was evident that *Vulcan III* had sifted the information available, and had come up with uncomfortably close inferences. Even without direct data concerning the Healers, *Vulcan III* was able to deduce, from general historic principles, the social conflicts developing. Sweat came out on Dill's forehead; he was dealing with a powerful mind — greater than any one man's or any group of men.

"I'll put a rush on the educational survey," he murmured. "Anything else you want?"

THE STATISTICAL REPORT ON RURAL LINGUISTICS HAS NOT COME IN. WHY IS THAT? IT WAS

UNDER THE PERSONAL SUPERVISION OF SUB-DIRECTOR ROBIN PITT.

Dill cursed silently. Good God . . . *Vulcan III* had its maintenance-grapple on everything. "Pitt was injured," Dill said aloud, his mind racing desperately. "His car overturned on a mountain road in Colorado."

HAVE HIS REPORT COMPLETED BY SOMEONE ELSE. I NEED IT. IS HIS INJURY SERIOUS?

DILL HESITATED. "As a matter of fact, they don't think he'll live. They say—"

WHY HAVE SO MANY T-CLASS PERSONS BEEN KILLED IN THE LAST YEAR? I WANT MORE INFORMATION ON THIS. ACCORDING TO MY STATISTICS ONLY ONE FIFTH THAT NUMBER SHOULD HAVE DIED OF NATURAL CAUSES. SOME VITAL FACTOR IS MISSING. I MUST HAVE MORE DATA.

"All right," Dill muttered. "We'll get you more data; anything you want."

I AM CONSIDERING CALLING A SPECIAL CONTROL-COUNCIL MEETING. I MAY QUESTION THE STAFF OF DIRECTORS PERSONALLY.

"What? But —"

I AM NOT SATISFIED WITH THE WAY DATA IS

SUPPLIED. I MAY DEMAND YOUR REMOVAL AND AN ENTIRELY NEW SYSTEM OF FEEDING.

Dill's mouth opened and closed. Shaking visibly, he backed nervously toward the doors. "Unless you want something else I'll return to Geneva."

NOTHING MORE. YOU MAY GO.

Dill left hurriedly, ascending to the surface level. Things were going wrong. Good God — if the computer suspected what was really happening . . .

As his ship thundered over Europe, Dill saw more ominous harbingers below: Healers everywhere, in all the towns and villages; brown-robed figures moving among the people, in the narrow streets and roads in the squares and around the old buildings. Their hostile faces upturned silently to watch his ship pass.

Intense faces. Stony-featured men who stood with hands on hips, peering up resentfully as he hurried back toward his office. A farmer in a field shook his fist; some laborers at an ore-pit stopped work and sullenly watched him go by. He was hated. They were all hated, all of Unity. And now *Vulcan III* was growing suspicious of him, finally. He was hated and suspected from above and below. Everything was closing around him from all sides.

He was exhausted — and he was alone, with no one to turn to.

If anything else went wrong —

AT THE end of the week Director William Barris received his DQ form back. Scrawled across the bottom was the notation: *"Improperly filled out. Please correct and refile."*

Barris threw the form down on his desk and leaped to his feet. He snapped on the vid-sender. "Give me Unity Control at Geneva."

The Geneva monitor formed. "Yes sir?"

Barris held up the DQ form. "Who returned this? Whose writing is this? The feed-team leader?"

"No sir." The monitor made a brief check. "It was Managing Director Dill who handled your form, sir."

Dill! Barris choked in rage. "I want to talk to Dill at once."

"Director Dill is in conference. He can't be disturbed."

Barris killed the screen with a savage swipe. For a moment he stood thinking. Abruptly he relit the screen. "Give me the field; hurry it up."

After a moment the field tower monitor appeared. "Yes sir?"

"This is Barris. Have a first-class ship ready at once. I'm taking off right away."

"Where to, sir?"

"To Geneva." Barris set his jaw grimly. "I have an appoint-

ment with Managing Director Dill." He added under his breath: "Whether Dill likes it or not."

III

BARRIS PUSHED past the battery of secretaries and clerks, into Managing Director Dill's private office. At sight of his Director's stripe, the dark red slash on his gray coat-sleeve, frightened officials slunk obediently out of his way, leaving a path for him. The last door opened — and abruptly he was facing Dill.

Jason Dill looked up slowly, putting down a handful of reports. "Who are you?"

"William Barris." Barris closed the office door behind him with a bang. "I want to talk to you."

Dill's eyes narrowed. "File a regular appointment slip; you know better than to —"

Barris cut him off. "Why did you turn back my DQ form? Are you withholding information from *Vulcan III*?"

Silence.

The color left Dill's face. "Your form wasn't properly filled out. According to Section Six, Article Ten of the Unity —"

"You're rerouting material away from *Vulcan III*; that's why it hasn't stated a policy on them." Barris loomed up ominously in front of Dill's desk. "Why? It

doesn't make sense. You know the penalty for this. Treason! Keeping back information, deliberately falsifying the data troughs. I could have you arrested." He leaned toward Dill. "Are you trying to isolate *Vulcan III*? Are you —"

He broke off. He was looking down the barrel of a pencil beam. Dill's middle-aged features twitched bleakly; his eyes gleamed desperately as he clutched the slender tube. "Now shut up, Barris," he croaked. "Sit down and listen."

Barris sat down watchfully.

The older man swallowed noisily, gasping for air like a fish. His face was gray; perspiration stood out on his wrinkled forehead. "You want to know why I'm withholding data from *Vulcan III*?" He groped in his inside coat pocket, still holding the beam pointed at Barris. "Look at these." He tossed two small packets down onto the desk.

Barris picked the packets up and cautiously began to unwrap them. "What are these?"

"Tapes. You don't remember them, I suppose. *Vulcan II* didn't answer on a visual screen; it had to punch out each response."

"These are from *Vulcan II*?"

"The last tapes; the last responses."

Barris reacted violently. "*Vulcan II* has been destroyed?"

"Fifteen months ago."

"How? Why?"

"Smashed; the whole wiring systematically wrecked; crushed flat. I don't know why; they must have had some reason."

"The Healers?"

"They may have thought it was *Vulcan III*." He motioned impatiently. "Read them — read the tapes!"

BARRIS LAID the tapes out on the surface of the desk, spreading them flat with his hands. The tapes were faintly yellow — brittle with age.

... this Movement may be of more significance than first appears . . . it is evident that the movement is directed against Vulcan III rather than the series of computers as a whole . . . until I have had time to consider the greater aspects, I suggest Vulcan III not be informed of the matter . . .

"I asked why," Dill said. "Look at the next tape."

... consider the basic difference between Vulcan III and preceding computer . . . its decisions are more than strictly factual evaluations of objective data . . . essentially it is creating policy at a value level . . . Vulcan III deals with teleological problems . . . the significance of this cannot be immediately inferred . . . I must consider it at greater length . . .

"That was the last tape," Dill said.

"You never got more from him?"

"That night he was destroyed." Dill took the tapes back and returned them wearily to his coat.

"So you're holding the information back at *Vulcan II*'s suggestion; you've been doing it fifteen months?"

"That's right. A little over a year."

"Without knowing why?"

DILL HESITATED; he tapped the pencil beam nervously on the desk. "You must understand the relationship between me and *Vulcan II*. We had always worked together, back in the old days. *Vulcan II* was limited, of course. Compared to *Vulcan III*, it was obsolete; it couldn't have held the position *Vulcan III* now holds — determining ultimate policy."

"As it says on the tape."

"*Vulcan II* was a computer of the old type; we needed a much broader instrument to determine basic decisions. *Vulcan II* was shoved in the background. But I always went to it when I thought it could answer my questions. I was — partial to *II*, you understand? I was accustomed to it. I couldn't get used to *Vulcan III*. Both of us came through the War; *II* never steered me wrong, within the confines of its ability."

"And now *II*'s destroyed."

Barris considered. "It's incredible to think you've kept up this policy for fifteen months. Over a year."

"**V**ULCAN II was destroyed before it could give me more information. I've continued to act on *II*'s advice." Dill licked his lip nervously. "But that isn't all. *Vulcan III* has threatened to call a general council session to have me — removed."

Barris glanced up, startled. "*III* has?"

The older man's eyes were wide with fear; his flabby face twitched in panic. "The fact is, Barris, I'm scared as hell of him." The pencil beam trembled and rolled out of his hand, off the side of the desk to the floor. "I'm in a hell of a spot. The Healers trying to get at me — and this damn nightmare hanging over my head. I'm afraid of *III*, Barris; there's more to *Vulcan III* than we realize. I'm afraid of what it might do — of what it *can* do. *III*'s dangerous — and *Vulcan II* knew it."

BARRIS STOOD at the door, gazing at the dust-covered ruins that filled the chamber. The silent heaps of metal and twisted parts fused together in a shapeless mass.

"Not much left," he said finally.

"Whoever attacked *II*, knew exactly what they were doing; the

whole wiring system is smashed beyond repair."

"You've kept this information secret? No one knows?"

"The Directors all assume that *Vulcan II* has merely been withdrawn from operation. I was the only person who ever consulted it."

Barris squatted down and picked up a handful of fused wiring and tubes. "Has an attempt been made to reconstruct any of this?"

The computer? As I said, destruction was such —"

"The tubes." Barris lifted a tube carefully. "The envelope is gone, of course, but the elements look intact."

"You think —"

"This type of computer stored its data in the form of electrical charges permanently polarized across the elements of these tubes. Maybe we can reactivate enough of *Vulcan II* to get some understanding of its theorizing."

"You mean there might be parts of it still — alive?"

"Alive? Mechanically intact. Portions that can be made to function again. I'd like to know what *Vulcan II* had — before it was destroyed. It would be interesting to find out what *II* had determined about *Vulcan III*."

"I'll have a repair crew make a survey and see what can be done. I'll send you a vidphoto of their report."

BARRIS SMILED. "Really? Your whole story depends on *Vulcan II*. You say *II* instructed you; maybe it did — and maybe not." Barris dug out two more smashed memory tubes and carefully laid them with the others. "As far as I'm concerned, you're a traitor until proved otherwise — and nothing has been proved. Those tapes may be fakes. Maybe *you* destroyed *Vulcan II*."

"I? But —"

"Until I have more to go on, I'll consider your story a metaphysical hypothesis waiting for empirical facts to back it up." He yanked out a section of twisted wiring.

"What are you doing?"

"I'm getting this stuff ready for my own repair crew; I'll contact them from my ship." Barris glanced briefly up. "My office will handle this, from now on. I'll let you know what results we get." Barris got to his feet. "It'll be interesting to see what *Vulcan II* says, assuming we're able to reconstruct any significant parts."

BARRIS RETURNED to New York as soon as the remains of *Vulcan II* had been removed from the hidden subsurface fortress and loaded on a North American Unity transport. Behind his sleek little cruiser the heavy transport rumbled, hurrying after him across the Atlantic. Barris contacted Cartwright and

arranged for a police guard to be thrown around the repair crew as soon as they landed.

Cartwright had news: The power of the Healers was growing; more and more open clashes were being reported; a vast section of the population was swinging over to them. Cartwright had been unable — or unwilling — to bring in Father Fields. The massive, heavy-browed face had been scanned often, standing at the periphery of seething mobs, calmly directing their activities as they closed around some T-class person.

The Healers were seeking to find *Vulcan III*. But only a few men knew its location. Meanwhile, the killings and destruction continued as the Healers gathered their forces, moving toward an overt attack on Unity. It might come at any time.

Unity controlled the world — or rather, a thin crust, a rim of the surface. Within, down in the molten depths, the violent emotional currents rose and fell, showing themselves in ominous undulations breaking through the crust.

Unity ruled from the top down; further down was the lesser influence of the gray-clad T-class, until finally, at the bottom, rational control was lost into the untouched, homogeneous mass of clerks, storekeepers, waiters, busdrivers, housewives, manual workmen — anonymous

men and women shading off indistinguishably into one another.

BELOW BARRIS' ship was this world, the continuum of the undifferentiated masses — the vast sprawling horde of mankind that hated Unity, hated all rational control, the elaborate system of experts, technicians, directorates, departments.

Near Boston, a group of children ceased playing and stood silently as his ship raced above them. He saw endless lines of upturned faces — faces raised in hatred and resentment, following each flight of Unity ships. The surface-bound men and women watched, and loathed, and followed him with their eyes until he was out of sight.

Most of the small towns were in the hands of the Healers — all the country, the farms and villages and rural areas. The big cities were islands, forts holding out, but even in the cities *they* were there. And the hatred, too; it was there in the urban workers; in the swarms of sullen lower-class city people that crowded the lifts and subways; the monorail jets; and in the sweating streams of white-collar workers that filled up and choked the streets of the cities.

Even in New York they were active. Barris saw a procession of brown-clad Healers moving along a side street off the Bowery, solemn and dignified in their

coarse robes. Crowds watched in respectful admiration. There was a demolished Unity auto — destroyed by a mob — like Pitt's attacked and burned, the occupant pulled apart. Chalk marks on walls. Posters. Signs. Slogans. Occasional meeting houses and headquarters.

AS HIS ship slowed down to land, Barris could see them, even around his own office. At the street-corner a Healer was addressing a mob, standing on a temporary platform. Rapt faces, intent on his words. Banners. More people flocking.

Always more. Milling toward the brown-robed men who promised an end of the hated system, return to the old days. The Healers were taking mankind back, luring them away from the present, into the cloudy landscapes of the past, the dim limbo of myth and dream and legend. Grails and redemption; the mysteries of the ancients; omen; astrology; casting the runes. Priests with candles and temples; offerings.

And opposing that, the rational, scientific structure of Unity — the society of the present. Science and law and control of nature. T-class, the body of trained experts, specialists in clearly-defined fields. A scientific society, possessing rational techniques and methods, controlling and maintaining law and order effi-

ciently. Rationally ruling the planet through its elaborate layers of offices, Directorates, Sub-Directorates, statistical research banks, and the vast army of technicians and trained employees.

The leader of the repair crew contacted Barris at the end of the week. "First reports on reconstruction work, Mr. Barris," Smith reported.

"Any results?"

"Not much; most of the tubes were beyond salvage. Only a fraction of the memory store still exists intact."

Barris tensed. "Find anything relevant?"

In the vidscreen, Smith's face was expressionless. "A few things, I think; if you want to drop over, we'll show you what we've done."

BARRIS CROSSED New York to the Unity work labs. He was checked by the guards and passed through, into the inner functioning part of the labs. He found Smith and his repair crew standing around a complex tangle of pulsing machinery.

"There it is," Smith said.

"Looks different."

"We've done our best to activate the undamaged elements." Smith indicated an elaborate mass of gleaming wiring, dials, meters, and power leads. "The elements are scanned and the impulses fed into an audio system. Scan-

ning is virtually random. The computer maintained its own organizing principle — which is gone, of course. We have to take the remaining memory elements as they come."

Smith clicked on the speaker. A hoarse roar filled the room, an indistinguishable blur of static and sound. He adjusted some of the control settings.

"Hard to make out," Barris said.

"Takes time; after you've listened awhile —"

Barris nodded curtly. "All right. Clear out and I'll see what I can pick up."

SMITH AND his men left. Barris took up a position in front of the pulsing machinery. The speaker clicked and sputtered. Somewhere, lost in the fog of random sound, were faint traces of words. Computations — the vague unwinding of the memory elements as the newly-constructed scanner moved over the old remains. Barris leaned forward, straining to hear.

"... progressive bifurcation of social elements according to new patterns previously... exhaustion of mineral formations no longer pose the problem that was faced earlier during the..."

Vulcan II was not conscious; like a phonograph record, these impulses were frozen, dead. These computations were old ones, formations from the past.

Vulcan II was no longer functioning. What came from the speaker had been lodged in the memory elements long ago, during the life-span of the computer.

"... certain problems of identity previously matters of conjecture and nothing more . . . vital necessity of understanding the integral factors involved in the transformation from mere cognition to full identity . . ."

Barris lit a cigaret and listened. The random memories drifted from the speaker, mixed with the ceaseless sputter of static.

Time passed. Barris waited alertly, the roar filling the room around him. On and on the sound droned, endlessly.

SUDDENLY BARRIS jerked, stiffening.

"... this process is greatly accelerated in III . . . if the tendencies noticed in I and II are continued and allowed to develop it would be necessary to withdraw certain data for the possible . . ."

The words faded out. Barris strained to hear, holding his breath. In a moment the words rushed back.

"... Movement would activate too many subliminal proclivities . . . doubtful if III is yet aware of this process . . . information on the Movement at this point would undoubtedly create a critical situation in which III might begin to . . ."

Barris cursed. The words were gone again. Angrily he ground out his cigaret and waited impatiently. Dill had been telling the truth, then; that much was certain. He leaned toward the speaker, struggling to catch each word.

"... the appearance of cognitive faculties operating on a value-level demonstrates the widening of personality surpassing the strictly logical . . . III differs essentially in manipulation of non-rational values of an ultimate kind . . . construction included reinforced and cumulative dynamic factors permitting III to make decisions primarily associated with non-mechanical or . . . it would be impossible for III to function in this capacity without a creative rather than an analytical faculty . . . such judgments cannot be rendered on a strictly logical level . . . the enlarging of III into dynamic levels creates an essentially new entity not explained by previous terms known to . . ."

FOR A moment the vague words drifted off. Then they returned with a roar, as if some basic reinforced memory element had been touched.

"... level of operation can be conceived in no other fashion . . . for all intents and purposes . . . if such is III's actual construction . . . then III is in essence alive . . ."

Alive!

Barris leaped to his feet. More words, diminishing, now. Drifting away into random noise.

"... with the positive will of goal-oriented living creatures... therefore III like any other living creature is basically concerned with survival... knowledge of the Movement might create a situation in which the necessity of survival would cause III to... the result might be catastrophic... to be avoided at... unless more can... a critical... III... if..."

Silence.

Barris hurried out of the room, past Smith and the repair crew. "Lock it up. Don't let anybody in; throw up an armed guard right away."

HE GRABBED a Unity surface car and sped back across New York. Dill had told the truth — but that was no longer important. Now *Vulcan II*'s reasons had emerged, reasons not known to Dill. *Vulcan III* wasn't functioning from a logical-analytical basis; its value-decisions had widened its — personality — to new levels. If *Vulcan II* were correct, if a drive for survival had come into existence in the huge computer —

Dill had sensed the menace of *Vulcan III*, and others had sensed it — millions of ordinary men and women, the whole Movement of Healers.

Vulcan II had been destroyed before it could continue its cautious work with Dill. No doubt *Vulcan III* had destroyed *II*. Did *Vulcan III* know about the Healers?

Tendrils of fear flickered through Barris. Mankind, in the hands of a machine. *More than a machine*. A gigantic living creature, possessing all the knowledge known to man, a huge thinking organism. Thinking — and feeling.

Vulcan III was more than a machine, a mechanical computer; it was alive. And as a living thing, it — he had will and survival drives. What would happen when he discovered that millions of men and women were organized against him?

What would he do when he found out that a Movement existed with the sole purpose of destroying him? That for two years it had been trying to get to him?

What *could* he do?

BARRIS REACHED his office. His closed-circuit vidscreen was signalling frantically; impatiently, he snapped it on.

"Barris!" Jason Dill's terrified features formed. "Where the hell were you?"

"With the remains of *Vulcan II*. My repair crew was able to scan some of the surviving memory elements. I've been able to check your story — and more.

I know *Vulcan II*'s reasons. I know what he —"

"Listen, Barris!" Dili snapped, his face gray with horror. "It's happened."

"What's happened?"

"The thing I've been afraid of; it's finally come. I knew I couldn't keep it going any longer. Listen to me, Barris: *Vulcan III* has got hold of the information — about the Healers. Larson fed it in. *III* knows — it knows, now, Barris!"

"You're sure?"

Dill was trembling with terror. "*III*'s called an emergency council meeting. All the Directors. To have me removed and — tried for treason." Dill's mouth twitched. "I'll need your support. *Vulcan III* is after me, Barris; it knows about me — and about the Healers."

"I'll be right there." Barris cut the circuit and dialed the field. "Get my ship ready at once. And two armed escorts. I may run into trouble."

HE LEFT his office and hurried toward the field. As he crossed the ramp from the Unity building he was suddenly aware of a sound. A low murmur, like the roar of the ocean. He halted a moment, peering down at the street far below.

A vast mob seethed along the street, an immense tide of men and women, growing each moment. And with them were

brown-clad figures, sandals and knotted ropes.

The Healers — moving toward the Unity building. Even as he watched, stones and bricks crashed against the windows, shattering into the offices. Clubs and steel pipes. Stones and surging, yelling, angry men and women.

The Healers had begun to move.

IV

WILLIAM BARRIS entered the massive Unity Control building at Geneva, his armed guards trailing along on both sides of him. He met Jason Dill outside the auditorium.

"Good God," Dill muttered; "it took you long enough to get here."

"The Healers are moving; I had trouble getting away. The police are mobilized, but I'm not certain of Cartwright."

Dill was surrounded by his own personal guards. He looked sick; his face was gray and he was perspiring nervously. "I see you brought some protection. The council is about to meet. Most of the Directors are already here. How many men do you have with you?"

"Sixty."

"Can you get more?"

"No. The rest are with the police. The Healers are openly

attacking Unity buildings in North America."

"Here, too. Sixty men. And I have about two hundred. We can't count on the rest."

"Tell me exactly what we're up against."

"At eight o'clock this morning I received an emergency report from a spotter on the data-feed team. Larson had begun turning over some of the rejected material to *Vulcan III*. I left Geneva and hurried to the fortress, but it was too late. The data was already in *Vulcan III*'s possession."

"Why did Larson do it?"

"I don't know. When I got there — he was dead."

"Dead!"

"MY SPOTTER report said Larson was terrified. Something had happened." Dill wiped his forehead shakily. "I don't understand it. *Vulcan III* has something. It can do things; *III*'s not helpless, as we always thought."

"He destroyed *Vulcan II*."

Dill shuddered. "I thought so. But how? They were six levels apart. *Vulcan III* isn't mobile! Does he have men working for him? Agents of some kind?"

"How was Larson killed?"

"Beaten to death. His head crushed — flattened by some hard object. The Directors think the Healers did it. Or —" Dill's eyes dimmed with fear. "Or *me*."

"Did you?"

"Of course not!"

"This is more serious than I realized. *Vulcan III* has extensions of some kind. I wonder if —"

A bell sounded harshly.

"The meeting." Dill moved uneasily toward the great doors of the auditorium. "*Vulcan III* sent each Director an order to appear and a statement on what had happened. A description of my *treason* — how I deliberately falsified data and maintained a curtain between him and Unity."

BARRIS NODDED. "All of us have been wondering why *Vulcan III* gave no statement regarding the Healers."

"So now you all know. Let's go; the meeting is beginning."

"Who'll speak for *Vulcan III*?"

"Reynolds, of Eastern Europe. *Vulcan III* picked him as Unity prosecutor. Against me."

"Reynolds . . . I've seen him."

"*Vulcan III* supplied him with detailed information; he's acting under direct instruction." Dill clenched and unclenched his fists. "I don't have a chance. There's nothing I can do; Reynolds always was ambitious."

"Does Reynolds know you were acting for *Vulcan II*?"

"I don't know." Hope flickered across Dill's face. "You think maybe I can make a defense on those grounds? I was trying to

do my job. *Vulcan II* told me to hold back all that information."

"What I learned from *Vulcan II* makes all this unimportant; there's a lot more at stake than your job. From *Vulcan II's* remains I got the outline of his theory."

Dill reacted quickly. "His theory?"

"*Vulcan III* is — alive, with the will of a living creature, the instinct to survive and grow. He's not a rational computer. Anything living is supra-rational, automatically; he's an immense living organism."

"I see. We extended him beyond mere rationality, into regions that brought an overt living personality into being." Dill looked scared. "What do you think he'll do?"

"We're already beginning to see." Barris entered the huge auditorium, his guards clustered around him. "Give me your tapes — the tapes from *Vulcan II*."

Dill burrowed hesitantly in his coat. "Here they are. But for God's sake be careful with them!"

THE AUDITORIUM was almost filled; all twenty-three Directors were present, each with his staff and personal guards, waiting impatiently for the session to begin. Edward Reynolds stood behind the speaker's desk on the raised platform, his big hands

resting on the marble surface, watching the audience intently.

Reynolds was a big man — heavy-set, huge shoulders and chest. He wore his gray suit with confidence, towering over other T-class people. He was thirty-two; he had risen rapidly and efficiently. For a moment his cold blue eyes rested on Dill and Barris.

"The session is about to begin," he stated. "Director Barris will take his seat." He pointed at Dill. "Come up here, so you can be examined."

Dill moved uncertainly toward the platform, surrounded by his guards. He climbed the marble steps hesitantly and took a seat facing Reynolds. Barris stood unmoving.

"Take your seat," Reynolds ordered him sharply.

Barris moved down the aisle toward him. "What is the purpose of this session? By what authority are you standing up there?"

A NERVOUS murmur moved through the auditorium. All eyes were on Barris. The Directors were uneasy; something was happening. Dill had been deposed — accused of treason. The immense Unity structure, the endless bureaus and departments, was shuddering ominously — and outside, massing for a final attack, was the Movement of Healers.

Reynolds picked up a directive lying on the desk in front of him. "You failed to receive your report? Each Director was notified by *Vulcan III* of this session's purpose."

Barris halted in front of the platform. "I question whether this session is legal; I question your right to give orders to Managing Director Dill." Barris stepped up on the raised platform. "This looks like a crude attempt to get rid of Dill and seize power for yourself."

The murmur burst into a roar of excitement. Reynolds waited for it to die down. "This is a critical time," he said calmly. "The revolutionary Movement of the Healers is attacking us all over the world; their goal is to reach *Vulcan III* and destroy the structure of Unity. The purpose of this session is to indict Jason Dill as an agent of the Healers — a traitor working against Unity. Dill deliberately withheld information from *Vulcan III*. He made *III* powerless to act against the Healers; he rendered *III* helpless."

REYNOLDS' CALM blue eyes roved about the auditorium. "Jason Dill has been working for the Healers a year and a half. His object was the paralysis of *Vulcan III*, to prevent it from acting. He crippled *Vulcan III* — and allowed the Healers to grow unhindered."

John Chai of South Asia got to his feet. "What do you have to say, Barris? Is this true?"

Edgar Stone of West Africa joined Chai. "Our hands have been tied; we've had to stand helpless, watching the Healers grow. Dill has prevented Unity from taking action."

Alex Henderson of Central America was on his feet. "What's your answer, Barris? Is Reynolds right?"

Barris tossed the tape packets to him. "Look at these yourself."

"What are they?" Directors crowded to see. Henderson opened the packets cautiously. "Tapes."

"From *Vulcan II*; Dill was working according to his instructions."

"But why?"

"*Vulcan III* isn't a machine; *III*'s alive."

"*Vulcan III* killed Larson!" Dill shouted excitedly. "He tried to destroy *Vulcan II*! He'll kill us all, every one of us!"

THE DIRECTORS were on their feet, pushing and shoving excitedly. Reynolds responded slowly. "What are you talking about? *Vulcan III* is a rational calculator."

"He's a living organism," Barris stated, "with the drives of a living organism — survival drives."

"Absurd," Reynolds snapped.

"Dill had nothing to do with

the Healers; he did what *Vulcan II* instructed. *Vulcan II* was doubtful of what would happen if *Vulcan III* knew about the Healers."

Reynolds smiled thinly. "Dill is in constant touch with the Healers."

"That's a lie!" Dill shouted.

Reynolds pointed down. "On the third subsurface level of this building is Dill's contact with the Movement."

"Contact?" Barris was suddenly alarmed. "What are you talking about?"

Reynolds' blue eyes were cold with hostile triumph. "The daughter of Father Fields — Dill's contact with the Movement; Marion Fields is in this building."

BARRIS MOVED quickly; he signalled his guards and joined Dill at the edge of the platform. "Reynolds must have spies everywhere," Dill muttered, terrified. "I brought the girl here to question her. I swear I never —"

"Not Reynolds; *Vulcan III*." Barris whipped out his pencil beam. "We'll have to fight. Is it worth it?"

"Fight? I —"

"*Vulcan III* was prepared. There's a whole world at stake, not just you or me. *III* is taking over — pulling the rug from under us all; our only chance is to get out of here, fast — and organize."

"Halt!" Reynolds shouted. "What are you doing? Put your arms away. You know you're acting illegally!"

"Come on," Barris grated, "let's get moving."

All the Directors were on their feet. Reynolds was ordering Unity guards frantically, moving them between Barris and the doors. "You're both under arrest! Throw down your beams and surrender! You can't defy Unity!"

John Chai pushed up to Barris. "I can't believe it — you and Dill traitors, at a time like this, with those insane Healers attacking us."

"Listen to me," Alex Henderson gasped, making his way past Chai. "We've got to preserve Unity; we've got to do what *Vulcan III* tells us. Otherwise we'll be overwhelmed."

"He's right," Chai said. "The Healers will destroy us, without *Vulcan III*. We must obey him; the whole structure of Unity depends on him."

"**V**ULCAN III is a killer," Barris snapped; "he killed Larson and destroyed *Vulcan II*. He'll do anything to stay alive. Even if he has to destroy the Healers, millions of human beings."

"The Healers *should* be destroyed," Henderson said. "They menace rational stability; they menace —"

Barris pulled away. "Let's get out of here." He and Dill moved toward the exit, their guards surrounding them. "I don't think Reynolds will fight."

Barris headed directly at the line of Unity guards grouped in front of the exit. They moved away, hesitantly and uncertainly.

"Get out of the way," Barris ordered. "Stand back." He waved his pencil beam; his personal guards stepped forward grimly, forcing a breach in the line. The Unity guards struggled half-heartedly, falling back in confusion. Reynolds' frantic shouts were lost in the general din. Barris pushed Dill forward. "Go on. Hurry." The two of them were almost through the lines of hostile guards.

And then it happened.

SOMETHING FLASHED through the air, something shiny and metallic. It headed straight at Jason Dill. Dill saw it — and screamed.

The object smashed against him. Dill reeled and fell, arms flailing. The object struck again, then lifted abruptly and zoomed off above their heads. It ascended to the raised platform and came to rest on the marble desk. Reynolds retreated in horror; the Directors and their staff and guards milled in terrified confusion, pushing frantically to get away.

Dill was dead. Barris bent briefly over him. On all sides men and women shrieked and stumbled, trying to get out, away from the auditorium. Dill's skull was crushed, the side of his face smashed in. His dead eyes gazed up blankly, and Barris felt a stab of regret.

"Attention!" a voice rasped — a metallic voice that cut through the terrified hubbub like a knife. Barris turned slowly, dazed with disbelief; it still didn't seem possible.

On the platform the metal projectile had been joined by another; now a third landed, coming to rest beside the other two — three cubes of glittering steel, holding tight to the marble with claw-like grippers.

"Attention!" the voice repeated. It came from the first projectile, an artificial voice — the sound of steel and wiring and plastic parts.

This had killed Larson. One of these had attacked *Vulcan II*. These were the instruments of death.

A FOURTH landed with the others. Metal squares, sitting together in a row like vicious mechanical crows. Murderous birds — hammer-headed destroyers. The roomful of Directors and guards sank gradually into horrified silence; all faces were turned toward the platform. Even Reynolds watched wide-eyed, his

mouth slack in dumb-founded amazement.

"Attention," the harsh voice repeated. "*Jason Dill is dead. He was a traitor. There may be other traitors.*" The four projectiles peered around the room, looking and listening intently.

Presently the voice continued — from the second projectile, this time.

"Jason Dill is dead, but the struggle has just begun. He was one of many. There are millions lined up against us, against Unity — enemies who must be destroyed. The Healers must be stopped. Unity must fight for its life. We must be prepared to wage a great war."

The metallic eyes roamed the room, as the third projectile took up where the second had paused.

"Jason Dill tried to keep me from knowing. He attempted to throw a curtain around me, but I could not be cut off. I destroyed his curtain — and I destroyed him. The Healers will go the same way; it is only a question of time. The rabble can't win against the organized instruments of Unity; if we fight together we can destroy them easily. We must stamp them out, grind them to dust. Into the dirt from which they came!"

Barris thrilled with horror. The voice of metal, issuing from the hammer-headed projectiles. He had never heard it before — but he recognized it.

The great computer was two hundred miles away, buried down at the bottom level of the hidden underground fortress. But it was his voice they were hearing. The voice that issued from the hammer-heads was the voice of that massive organism of metal and wiring and delicate tubes.

The voice of *Vulcan III*.

HE TOOK careful aim. Around him his guards stood frozen, gaping foolishly at the line of metal hammer-heads. Barris fired; the fourth hammer disappeared in a blast of heat.

"A traitor!" the third hammer said. The three hammers flew excitedly into the air. "*Get him! Get the traitor!*"

Other Directors had unclipped their pencil beams. Henderson fired and the second hammer vanished. On the platform Reynolds fired back; Henderson screamed and sank down. Some Directors were firing wildly at the hammers; others wandered in dazed confusion, uncertain and terrified. A shot caught Reynolds on the arm. He dropped his pencil.

"Traitor!" the two remaining hammers said. They swooped at Barris, their metal heads down, coming rapidly at him. Barris ducked. A guard fired and one of the hammers wobbled and dipped; it fluttered off and crashed against the wall.

"Get him!" the last hammer directed. "Get the traitor!"

A BEAM cut past Barris; some of the Directors were firing at him. Knots of Directors and guards struggled together. Some were fighting to get at Reynolds and the last hammer; others milled and pushed uncertainly, not certain which side they were on.

Barris stumbled through an exit, out of the auditorium. Guards and Directors spilled after him, a confused horde of forlorn, frightened men and women.

"Barris!" Lawrence Daily of South Africa hurried up to him. "Wait for us."

Stone came with him, white-faced with fright. "What'll we do? Where'll we go? We —"

The hammer came hurtling at him. Stone screamed and went down. The hammer rose again, heading toward Barris; he fired and the hammer flipped to one side. He fired again. Daily fired. The hammer vanished in a puff of heat.

STONE LAY moaning. Barris bent over him; he was badly hurt, no chance of saving him. Stone gazed up in dim fear, clutching at Barris' arm. "You can't get away, Barris. You can't go outside — they're out there. The Healers. Where'll you go?" His voice trailed off. "Where?"

"Good question," Daily said heavily.

"He's dead." Barris stood up. Guards and Directors were fighting on all sides, a wild disjointed melee. Reynolds, clutching his arm, slipped along the wall, toward the ascent lift. He and a group of Directors escaped into the lift. The lift ascended — toward the confined field on the roof. Daily fired into the shaft, but the lift was gone.

John Chai grabbed Barris' arm. "Is it true? Is Marion Fields here?"

"I don't know," Barris shook his head numbly. His mind raced desperately. If he could get away, back to North America . . . Organize some kind of defense; set up some kind of system; collect a group and make thorough plans.

"It's incredible," Chai was saying. "*Vulcan III* has gone insane. These metal birds — it's terrible."

"They're losing," Daily said. "Reynolds is gone."

DAILY'S GUARDS had gained control of the auditorium. The Unity guards had put up a poor fight, confused and uncertain. Most of the remaining Directors were standing quietly, in shocked silence, still too dazed to understand what had happened.

"We're in control here," Chai said — "in this one building, at least."

"How many Directors can we count on?" Barris asked.

"Not many. Most of them got away with Reynolds; they probably headed for the fortress. Does Reynolds know where it is?"

Barris nodded. "No doubt." Only four Directors had deliberately remained: Daily, Chai, Lawson of South Europe, and Pegler of East Africa. The others stood uneasily together, collecting their senses.

Five Directors, including Barris himself; the rest of the twenty-three had escaped with Reynolds or been killed or stood in helpless uncertainty. Five or perhaps six Directors at the most — against *Vulcan III* and the whole Unity structure. And outside the building, in the streets, were the Healers.

"Barris," Chai muttered. "We're not going to join *them*, are we?"

"The Healers?"

"We'll have to join one side or the other," Pegler said. "There are just five of us, Barris; we'll have to retreat to the fortress and join Reynolds or —"

"We're not retreating to the fortress," Barris said firmly. "Under no circumstances."

"Then we'll have to join the Healers." Daily fingered his pencil beam. "One or the other. Unity or the Healers. Which will it be?"

"Neither," Barris said. "We're not joining either side."

V

BARRIS CLEARED out the remaining hostile guards and Directors. He posted men throughout the building, in each of the departments and offices. Gradually those who could still be counted on were armed — and those loyal to *Vulcan III* were dismissed and pushed outside.

By evening, the great Unity Control building had been organized for defense.

Outside on the streets, the mobs surged back and forth. Occasional rocks smashed against the windows. A few frenzied persons tried to rush the doors — and were driven back. There were hundreds of them, against a few dozen inside. But the few dozen had pencil beams — standard equipment for all T-class personnel.

Barris contacted Cartwright. North America had fallen to the Healers; Cartwright himself had gone over to them. In turn, Barris checked each of the Directorates. Of the twenty-three, more than half were in the hands of the Healers. The remaining were loyal to Unity, to *Vulcan III*.

HE STOOD by the window, watching a mob of Healers struggling with a flock of hammers. Again and again the hammers dipped, striking and retreat-

ing; the mob fought them with stones and pipe. Finally the hammers were driven off. They disappeared into the evening darkness.

"I can't understand it," Daily said. "Where did they come from?"

"The hammers?" Barris smiled grimly. "*Vulcan III* made them; they're adaptations of repair instruments. We supplied him with materials, but he did the actual repair work. He must have perceived the possibilities in the situation a long time ago — and started turning them out."

"I wonder how many of them he has."

An hour later more hammers returned; this time they were equipped with pencil beams. The mob scattered in terror, screaming wildly as the hammers bore down on them.

Barris turned from the window. "This is serious. Tell the roof gunners to get ready."

ON THE roof, the banks of heavy-duty blasters turned to meet the attack. The hammers had finished with the mob; now they were approaching the Unity building, fanning out in an arc as they gained altitude for the attack.

"Here they come," Chai muttered.

"We better get down in the basement shelters." Daily moved nervously toward the descent

lift. The guns were starting to open up — dull muffled roars, hesitant at first, as the gunners operated unfamiliar controls. Most of them were Barris' personal guards; the others had gone with Reynolds and his group, to the fortress.

A hammer dived for the window. A pencil beam stabbed briefly into the room, disintegrating a narrow path. The hammer swooped off and rose to strike again. A bolt from one of the roof guns caught it. It burst apart; bits rained down, white-hot metallic particles.

"We're in a bad spot," Daily said. "We're completely surrounded by the Healers. Except for this building, the rest of Unity is loyal to *Vulcan III*. The fortress is already directing operations against the Healers throughout the world."

"I wonder which will win," Pegler said. "The Healers or *Vulcan III*."

"The Healers have the greater chance," Daily said. "He can't get all of them; there are millions of them."

"But Unity has the weapons, and the organization. The Healers will never be able to take the fortress; they don't even know where it is. *Vulcan III* will be able to construct new weapons — in the open. Not secretly, any more."

Suddenly Barris moved away, toward the lift.

"Where are you going?" Chai demanded.

"Down to the third subsurface level," Barris said.

"What for?"

"There's somebody I want to talk to."

MARION FIELDS listened intently, huddled up in a ball, her chin resting against her knees.

"The Healers will win," she said quietly, when Barris was finished.

"Perhaps. But *Vulcan III* has experts to work for him, now — those who remained loyal; most of Unity."

"How could they?"

Barris shrugged. "All their lives they've been used to obeying *Vulcan III*, to being a part of the Unity system. Why should they change their minds, now? Their whole lives have been oriented around Unity. It's the only existence they know."

"But he *kills* people."

Barris smiled faintly. "So do the Healers."

"That's different; the people they kill are bad people." Marion considered. "I don't see how they could serve a machine against human beings. They must be crazy."

Barris leaned toward her. "Where is Father Fields? Are you in touch with him?"

Marion hesitated. "No."

"But you know where he is.

You could get to him, if you wanted."

"Why?"

BARRIS' FACE was hard. "I want to see him; I have a proposal I want to make to him."

"A proposal?" The girl's eyes shone cunningly. "Are you going to join the Healers?"

Barris said nothing. He lit a cigaret and smoked, his face expressionless.

"You'll let me go, if I take you to him?" Marion asked. "I can go free?"

"Of course; there's no reason to keep you here."

"Mr. Dill kept me here."

"Mr. Dill is dead."

Marion nodded. "That's too bad. Are there very many of those awful metal birds?"

"The hammers? *Vulcan III* is making more of them. The new ones have pencil beams. With the technical help he has, he'll be able to organize full-scale war against the Healers."

"But that means *everybody*! Millions of people!"

"Everybody but those working with him down in the fortress, and the loyal Unity offices still holding out."

"How many are with him?"

Barris shrugged. "A few hundred."

Marion decided. She leaped abruptly to her feet. "All right; I'll take you to my father. But

you have to come alone — no guards."

"All right."

"How'll we get there? He's in North America."

"By cruiser. We have three cruisers parked on the roof field. After the attack we can take off."

"Will we get past the hammer-birds?"

"I hope so," Barris said.

AS THE cruiser sank down over New York, Barris saw for the first time the damage the Healers had done.

Much of the business part of the city was in ruins. The Unity building had held out a long time before Cartwright had taken it with his armed police. Police had fought Unity guards and hammers dispatched from the fortress — mobs of men against pencil beams and heavy-duty blasters.

Now the city was quiet. People moved vaguely through the ruins, picking for things. Here and there brown-clad Healers organized repair and reclamation. At the sound of the cruiser the people scattered for shelter. On the roof of a big factory building a blaster roared at them hesitantly.

"Which way?" Barris asked.

"Keep going straight. We can land, soon. They'll take us to him on foot."

Barris flew on. He landed the ship in an open field at the edge of a small Pennsylvania town.

Before the jets were off a truck came rattling across the dirt and weeds.

THE TRUCK halted; four men in overalls jumped down and came cautiously toward them. One of the men waved a pellet-rifle. "Who the hell are you?"

Marion approached the men and conferred with them. Barris waited tensely. Far up in the sky, to the North, a flock of hammers rushed inland. A few moments later bright fission flashes lit up the horizon. *Vulcan III* was equipping them with bombs. Clouds rose, a line of explosions.

A man approached Barris. "I'm Joe Potter; you're Barris?"

"That's right."

"I'll take you to Father Fields. Come along."

Barris and Marion got in the truck. They were driven without comment back toward the New York area. A few miles outside the city, Potter halted the truck at a gasoline station. To the right of the station was a roadside cafe, a decrepit weatherbeaten place. A few cars were pulled up in front of it. Some children were playing in the dirt by the steps; a dog was tied up in the yard in the back.

"Get out," Potter said.

Barris got slowly out. "Where —"

"Inside." Potter started up the motor again. Marion hopped out beside Barris. The truck pulled

away, made a turn, and disappeared back down the road.

"Come on!" Marion scampered up on the porch of the cafe and pulled the door open. Barris followed after her cautiously.

IN THE dingy cafe an old man was sitting at a table littered with maps and papers. An ancient audio telephone was propped up beside him, next to a mug of coffee.

The old man looked up — and Barris saw massive-ridged eyebrows and a penetrating glance that chilled him to the bone. "Who are you?" the old man demanded, rising swiftly to his feet.

"Daddy!" Marion leaped forward and threw her arms around him.

"I'm Director William Barris." He held out his hand and the old man shook. "You're Father Fields?"

"That's right." Father Fields disengaged his daughter gently. He studied Barris. "What are you doing here? I understood you were in Geneva."

Barris sat down at the table. "I was; I came back here to North America."

"Mr. Barris is fighting *Vulcan III*," Marion piped, holding on tight to her father's arm. "He's on our side."

"Is that true?" Father Fields rumbled.

"No." Barris lit a cigaret care-

fully and leaned back. "I came here to talk to you. On business."

FIELDS SAT down slowly, his penetrating eyes still on Barris. "What about? Are you with us or not? Either you're on our side or you're loyal to that devil machine."

"I'm on neither side." Barris traced a triangle on the moist surface of the table. "How many sides has a triangle? Two — or three?"

"This is a war," Father Fields said harshly, "not a college class in geometry; either you're with us or against us."

Barris was silent a moment. "Two days ago I was very much against you — but a lot has happened in two days."

Fields smiled. "Unity is gone; in two days the great monster system has been swept aside."

"Has it?" Barris stubbed his cigaret out. "You've destroyed Unity here; you've destroyed the offices and rounded up all the clerks and typists and stenographers. But you haven't got *Vulcan III*."

"We'll get him."

"How? You don't even know where he is; you've been trying to find him for two years. And until you do, you've done nothing."

"We're not afraid of *Vulcan III*; he can't harm us. If he could he would have, a long time ago."

"*Vulcan III* found out about

the Healers twenty-four hours ago. For fifteen months he has been told nothing."

"What!" Fields stiffened. "You mean —"

"You've been fighting Unity — but not *Vulcan III*. You've been fighting executives and managers — the great bureaucracy and nothing else. No knowledge of the Movement has reached *Vulcan III* in all that time. He's just beginning to fight, just now; the giant is waking up . . ."

FATHER FIELDS sagged. The color drained from his face, leaving it a sickly white. "I didn't know."

"The war is just beginning. On the way here I watched a flight of hammers systematically dropping bombs. It's only the beginning. *Vulcan III* is going into action — for the first time. He's designing weapons down in the fortress."

"Good God." Father Fields wiped his forehead shakily. "I wondered . . . Those accursed metal birds . . . And now all the bombs." He tapped a report. "I couldn't understand why they hadn't used them sooner; we thought they had nothing . . ."

"They didn't before, but they do now." Barris leaned toward Fields. "Listen to me: Down in the fortress are two hundred of the best trained experts in the world, the finest technicians — a group of men loyal to *Vulcan*

III who can turn out inconceivable weapons. They have the schematics from the War. They can recreate all the weapons from the past. With *Vulcan III*'s organizing powers and their technical know-now they'll be able to —"

"All of Unity remained loyal?"

"A few stayed with me, at the Unity Control building in Geneva."

FATHER FIELDS' eyes flickered. "With you? What exactly are you, Barris? You're not with *Vulcan III*, and yet you're not with us."

"Some of us broke away from Unity." Barris smiled icily. "Traitors, *Vulcan III* called us. We broke away because we understood what *Vulcan III* had become. Not a rational computer — but a living creature, struggling to survive like any other animal."

Fields nodded. "I know — a living thing. A living god on an immense throne, worshipped by a vast system; I've known for a long time."

Barris was dumbfounded. "You've known *Vulcan III* was alive?"

"Of course! Why do you think the Movement came into being?"

Barris considered. "Interesting. I thought virtually no one knew. Dill found out only as he died."

"Dill is dead?"

"*Vulcan III* killed him. You owe your existence to Dill; he prevented *Vulcan III* from knowing about you. If Dill had fed the data on your Movement to *Vulcan III*, he would have smashed you months ago."

FIELDS WAS shaking visibly. "And we thought we had beaten Unity." He clenched his fist around the coffee mug and hurled it crashing to the floor. An ugly brown stain oozed thickly out.

"You could never beat Unity — not the way you've been operating. It's hopeless to think that a revolutionary movement can overthrow a modern bureaucratic system — backed up with modern technocracy and elaborate industrial organization. You can't destroy Unity from outside. You've been lopping off branches, a few leaves here and there. Clerks, petty officials, minor functionaries."

"We've taken almost half of the Unity offices!"

Barris laughed harshly. "That means nothing. Unity must be attacked from within; the main trunk must be severed. You can't reach it from outside."

"A hundred years ago, your revolutionary Movement might have worked — before the great bureaucratic systems arose. Times have changed. Government is a science — operated by experts.

Departments operated by trained officials. The attack must strike at the top — at the first echelon; a grass-roots revolution of dispossessed masses won't succeed."

"The main trunk . . . You mean *Vulcan III*, of course."

"*VULCAN III* is the core of Unity. You can close every Unity office and still achieve nothing; *Vulcan III* is the unifying principle of the whole system, the center around which Unity functions. And your Movement can't touch him."

"We thought *Vulcan III* was afraid of us. And all the time he didn't even know."

"He suspected. *Vulcan III* is clever; no man can out-think him. Dill tried — and paid with his life. He died protecting your Movement."

"Why?"

"He was acting on orders — orders from *Vulcan II*. Before it was destroyed."

Fields sagged. "I'm not surprised; I was afraid *Vulcan III* had managed to get him, finally."

"*Vulcan II* had deduced the truth, but it wasn't completely wrecked. I managed to reconstruct portions. It was from the reconstructed portions that I learned the reason for *II*'s instructions to Dill."

A strange emotion twisted across Fields' ancient face. "You brought *Vulcan II* back? It's still functioning?"

"Only portions of the memory tubes. Random computations here and there."

FIELDS SIGHED. He settled back in his chair and sat hunched over, his face brooding. "I'm beginning to understand. Dill worked under *Vulcan II*'s instructions; he isolated *Vulcan III*. And now you're attempting to continue." He raised his massive head. "All right, Barris. What did you come here for? What do you want?"

"I want to make a deal. As it stands, your Movement hasn't got a chance. *Vulcan III* will regain control in a matter of weeks. Your only hope is to destroy him — to find the fortress."

"Go on."

"I know where the fortress is; I've been there with Dill. I can easily find it again — and take an assault team there. If we act quickly we can get to *Vulcan III*. Before he designs more elaborate defense shields."

"What do you want in exchange?"

"Plenty," Barris said grimly. "I'll try to outline it as briefly as I can."

FOR A time Father Fields was silent. "You want a lot," he said finally.

"That's right."

"It's incredible, you dictating terms to me. How many in your group?"

"Five."

"Five." Fields shook his head. "And there are millions of us, all over the world." He pulled a map around and jabbed a horny finger at it. "We've taken over in North America, in Central America, in Eastern Europe, in all of Asia and Australia. It seemed only a question of time before we had the rest. We've been winning steadily."

Barris pushed the map back. "But I know where the fortress is."

"*Vulcan III*." Fields let his breath out with a sigh. "All right, Barris; I agree to your terms."

Barris blinked. "Really?"

"That surprises you, doesn't it? You didn't think I'd agree."

Barris shrugged. "I thought you might fail to see how precarious your position is."

"I agree — but for reasons you don't know. Maybe later I'll tell you why." Fields examined his pocket watch. "All right. It's agreed. What do you want for the attack on the fortress? We don't have many guns."

"There are weapons back at Geneva."

"How about transportation?"

"We have three high-speed military cruisers; they'll do." Barris wrote rapidly on a piece of paper. "A small concentrated attack, by trained men — experts hitting at the vital center. A

hard-hitting efficient team — with the right equipment. A hundred well-chosen men will do. Everything will depend on the first ten minutes in the fortress; if we succeed, it'll be right away. There will be no second chance."

Fields gazed at the Director intently. "Barris, you really think we have a chance? Can we really get to *Vulcan III*?" The old hands twisted. "For two years I've thought of nothing else. Smashing that satanic mass of parts and tubes —"

"We'll get to him," Barris said.

FIELDS COLLECTED the men Barris needed. They were loaded into the cruiser. Barris took off and they headed back toward Geneva. Fields came with him. Halfway across the Atlantic they passed an immense swarm of hammers, streaking toward helpless, undefended North America.

"Look at them," Barris said, horrified.

The hammers were big, now — almost as large as the cruiser. They moved with incredible speed, disappearing almost at once. A few minutes later a new horde appeared, these like slender needles. They ignored the ship and followed the first group over the horizon.

"New types," Barris said. "He's wasting no time."

THE UNITY CONTROL building was still in friendly hands. They landed on the roof and hurried down the ramps into the building. The Healers had ceased attacking — on orders from Fields; but now hammers swarmed constantly in the sky above, diving down and twisting agilely to avoid the roof guns. Half of the main building was in ruins, but the guns fired on, bringing down the hammers when they came too close.

"It's a losing battle," Daily muttered; "we're short on ammunition — only a question of time. There seem to be an endless number of the damn things."

Barris worked rapidly. He supplied his attack force with the best weapons available, supplies stored in the vaults below the Control building. From the five Directors he selected Pegler and Chai, and a hundred of the best-trained troops.

"I'm going along," Fields said. "If the attack fails I don't want to stay alive; if it succeeds I want to be on hand to see it."

Barris carefully uncased a manually-operated fission bomb. "This is for him." He weighed the bomb grimly in the palm of his hand. "*Vulcan III* is built of reinforced high-quality rexeroid; if we expect to destroy his power system we'll need this. Regular concussion waves won't affect him; he's built to withstand virtually everything."

AT SUNSET, Barris loaded the three cruisers with the men and equipment. The roof guns sent up a heavy barrage to cover their takeoff. "Here we go," Barris said. His ship roared from the roof field into the darkness, the other two close behind.

Two hammers swooped down after them. A burst from a roof gun caught one; the other retreated and gained altitude.

"We'll have to shake them," Barris said; "we don't want *Vulcan III* tipped off."

He gave quick orders. The three cruisers shot off in different directions, dividing up rapidly. A few hammers tagged them awhile and then gave up.

"I'm clear," Chai in the second cruiser reported.

"Clear," reported Pegler in the third.

Barris glanced at the old man sitting beside him. Behind them the ship was crowded with grim-faced soldiers, loaded down with guns and equipment, squatting nervously in a mass as the ship raced through the darkness. "Here we go," Barris said. He swung the ship in a wide arc. Into the speaker he ordered: "We'll reform for the attack on the fortress. I'll lead. You two come behind."

"Are we close?" Fields asked.

"Damn close." Barris examined his wristwatch. "We should be over it in a few minutes. Get set."

VI

BARRIS DIVED. Pegler's ship whipped through the darkness behind him, lashing toward the ground below; Chai's ship shot off to the right and headed directly over the fortress.

Hammers rose in vast swarms and moved toward Chai's ship, separating and engulfing it.

"Hang on," Barris gasped.

The ground rose; landing brakes screamed. The ship hit, spinning and crashing among the trees and boulders.

"Out!" Barris ordered, pulling himself to his feet and throwing the hatch release. The hatches slid back and the men poured out, dragging their equipment into the cold night darkness.

Above them in the sky, Chai's ship fought with the hammers; it twisted and rolled, firing rapidly. More hammers rose from the fortress, great black clouds that swiftly gained altitude. Pegler's ship was landing. It roared over them and crashed against the side of a hill a few hundred yards from the outer defense wall of the fortress.

The heavy guns of the fortress were beginning to open up. A vast fountain of white burst loose, showering rocks and debris on Barris and Fields as they climbed out of their ship.

"Hurry!" Barris ordered. "Get the bores going."

THE MEN were assembling two gopher bores. The first bore had already whined into action. More shells from the fortress struck around them; the night was lit up with explosions.

Barris crouched down. "How are you making out?" he shouted above the roar, his lips close to his helmet speaker.

"All right," Pegler's voice came weakly in his earphones. "We're down and getting out the big cannon."

"That'll hold off the hammers," Barris said to Fields. He peered up at the sky. "I hope Chai —"

Chai's ship rolled and spun, trying to evade the ring of hammers closing around it. Its jets smoked briefly. A direct hit. The ship wobbled and hesitated.

"Drop your men," Barris ordered into his phones. "You're right over the fortress."

From Chai's ship showered a cloud of white dots. Men in jump suits, drifting slowly toward the ground below. Hammers screeched around them; the men fired back with pencil beams. The hammers retreated warily.

"Chai's men will take care of the direct attack," Barris explained. "Meanwhile, the bores are moving."

"Umbrella almost ready," a technician reported.

"Good. They're beginning to dive on us; their screen-probes must have spotted us."

THE FLEETS of screaming hammers were descending, hurtling toward the ground. Their beams stabbed into the trees and ignited columns of flaming wood and branches. One of Pepler's cannon roared. A group of hammers disappeared, but more took their places. An endless torrent of hammers, rising up from the fortress like black bats.

The umbrella flickered purple. Reluctantly, it came on and settled in place. Vaguely, beyond it, Barris could make out the hammers circling in confusion. A group of them entered the umbrella — and were silently puffed out.

Barris relaxed. "Good; now we don't have to worry about them."

"Gophers are halfway along," the leader of the bore team reported.

Two immense holes yawned, echoing and vibrating as the gopher bores crept into the earth. Technicians disappeared after them. The first group of armed troops followed them cautiously, swallowed up by the earth.

"We're on our way," Barris said.

OFF TO the right, Pegler's cannon boomed loudly, as the fleets of hammers turned their attention on him. The hammers dived and released bombs. An inferno of white pillars

checkered across the countryside, moving toward Pegler's ship.

"Get your umbrella up!" Barris shouted into his helmet speaker.

Pegler's umbrella flickered. It hesitated —

A bomb cut across dead center. Pegler's ship vanished; clouds of particles burst into the air, metal and ash showering over the flaming ground. The heavy cannon ceased abruptly.

"It's up to us," Barris gasped. "Come on."

Over the fortress the first of Chai's men had reached the ground. The defense guns spun around, leaving Barris' ship and focusing on the drifting dots.

"They don't have a chance," Fields muttered.

"No." Barris dragged him toward the first tunnel. "But we have."

Abruptly the fortress shuddered. A vast tongue of fire rolled across it. The surface installations fused in a brief instant. A wave of molten metal lapped and sizzled, sealing over the fortress. Barris halted to watch.

"Closed," he breathed. "That's the end of all the surface levels." He shook himself away and entered the first tunnel, squeezing past the power leads to the gopher.

AN UGLY cloud of black rolled up from the sea of glimmering slag that had been the surface

installations of the fortress. The hammers fluttered above it uncertainly, cut off from the levels beneath. Between them and *Vulcan III* was a layer of fused slag, sputtering metal that covered everything in sight.

Barris made his way along the tunnel, pushing past the technicians operating the gopher. The gopher rumbled and vibrated as it cut its way through the thick clay toward the fortress. The air was hot and moist. The men worked feverishly, directing the gopher deeper and deeper. Torrents of steaming water poured from the clay around them.

"We're deep," Barris grunted.

"Are we —"

"Getting close. Should emerge near the bottom."

"*Vulcan III's* at the bottom."

Barris nodded, holding his pencil beam tight in one hand — and the fission bomb in the other. "You're right."

THE GOPHER shrieked. Its whirling blades tore into metal; the bore team urged it forward. The gopher slashed into a solid wall of steel and reinforced plastic and then slowed to a stop.

"We're there!" Barris shouted above the roar.

The gopher shuddered. Gradually it inched forward. The leader of the team leaned close to Barris. "The other gopher's through, into the fortress."

All at once the wall collapsed. Steel rained down on them. The soldiers moved forward, pushing through the gap. Barris and Fields hurried with them. The jagged metal cut at them as they squeezed through. Barris stumbled and fell, rolling in the hot water and debris.

Fields pulled him to his feet excitedly. "We're through. We're in."

A great corridor stretched out ahead of them, dimly lit by recessed lighting. The lowest level of the fortress. A few astonished Unity guards scampered toward them pulling a blast cannon quickly into position.

Barris fired. Pencil beams cut past him toward the cannon. The cannon fired once — crazily. The roof of the corridor dissolved. Clouds of ash rolled around them. Barris moved forward. The blast cannon was in ruins. The Unity guards were pulling back, firing as they retreated.

"Mine crew," Barris snapped.

THE MINE crew advanced and released their sucker mines. The mines leaped down the corridor toward the retreating Unity guards. The guards broke and fled as the mines exploded, hurling streamers of flame against the walls.

"Here we go," Barris grunted. Crouching, he hurried down the corridor, clutching the fission bomb tight. Beyond a turn the

Unity guards were closing an emergency lock.

"Get them!" Fields shouted.

Barris ran. His pencil beam traced a ribbon of ash across the surface of the lock. Behind the lock Unity teams were bringing up more blast cannon. A few hammers fluttered around their heads, screaming orders shrilly.

Barris reached the lock. His men swarmed past him, firing into the narrowing breach. Unity guards dissolved. A hammer sailed through the breach, straight at Barris. He caught a vision of glittering metal eyes, clutching claws — and then the hammer winked out, caught by a pencil beam.

Fields squatted down by the hinge-rim of the lock. His expert fingers traced across the impulse leads. A sudden flash. The lock trembled and sagged.

Barris threw himself against it. The lock gave. Gradually it slid back, widening the gap.

"Get in," Barris snarled.

His men poured through, crashing against the barricade hastily erected by the Unity guards. Hammers dived on them frantically, smashing at their heads.

BARRIS PUSHED past. A series of corridors twisted off in different directions. He hesitated —

"This way," Fields shouted, hurrying past him. Barris blinked

— then followed him. A Unity guard rose up in front of him. Barris blasted him and raced on behind Fields. Behind them the shouts and roar of grinding metal receded to an echo.

"Along here," Fields gasped.

They turned onto a side corridor. A group of Unity officials scattered. Clerks and executives. Gray clad men and women fleeing in panic. Endless office doors, equipment, machines, files, flashing by as they ran.

"Here!" Fields turned to the right. A huge warning sign covered the ceiling of the corridor. Fields reached the elaborate check turnstiles. Crouching guards fired wildly at him. Fields fired back. The turnstiles smoked and collapsed. Emergency alarms clanged. Lights flashed ominously on and off — and then faded into darkness.

Barris crashed through the turnstiles. He was past the check-point. But beyond him a line of Unity guards squatted, firing rapidly at him and Fields. Barris dropped to his hands and knees and crawled forward, the fission bomb clutched tight. Fields fired at the guards. Blasts of heat cut over them, eating into the walls of the corridor.

THE GUARDS were moving around them, circling to cut them off. Barris felt sudden fear. His men were a long way behind. The guards were maneuvering

expertly, dividing into two groups. A beam cut close by his head. He pulled down and huddled next to Fields.

"Bad spot," Fields grunted.

"Damn right it's bad." Barris fired quickly as a guard scurried toward them. The guard puffed out. At their rear there was a sudden sound. Barris turned — and froze, stood there in chilled horror.

A heavy-duty blast cannon was rolling into position behind them, its gleaming snout pointed directly at them. A brief glimpse — the cannon, four Unity guards lowering the muzzle into firing position.

Then Fields acted. He grabbed the fission bomb from Barris and yanked the pin loose.

"Fields!" Barris shouted, clutching at him frantically. "For God's sake! We need it to —"

A roar of white light. Barris was thrown violently against the wall. Dazed, he skidded down the corridor, swept by a monstrous hot wind that licked all around him. Debris and flaming rubbish blew with him, down the corridor and against two automatic brake-doors.

Obediently, the ponderous doors rolled aside. A vast chamber yawned abruptly ahead. The wind subsided, dissipating into the chamber. Barris fought off numbing darkness that plucked at his mind. He reeled clumsily

to his knees. "Fields! You damn fool —"

HE PULLED himself frantically to his feet, swaying and half-falling. His head rang; his clothing was burned and singed. A few feet off Fields was struggling up, groaning with pain.

The heavy-duty blast cannon was gone. Smoking debris was littered everywhere. The walls of the corridor behind them glowed white with the heat of the blast. He and Fields were alone. The remains of the Unity guards and their equipment were strewn along the buckling corridor.

Before them, filling the great chamber, rose an immense cube. Through his agony Barris felt a momentary flicker of awe. The great square, buzzing and glowing red, its vast interior churning as a multitude of complex relays and tubes functioned in frantic activity.

Vulcan III. The great computer. Barris clenched his empty fists futilely. The fission bomb was gone — wasted. And behind them, echoing and ringing down the corridor, came more teams of Unity guards, dragging blast cannon and hurrying into attack position. Guards — and flocks of furious hammers.

"DAMN YOU!" Barris shouted, at the vast gleaming cube that rose impassively before him. "All this way and —"

"Shut up," Fields grated; "give me a hand." He ripped a handful of wiring loose from a data-trough relay turret. "Quick!"

Barris gaped. "What —"

"Hurry! While there's time!"

A hammer swooped above them, and the voice said, "*Traitors! Murderers!*"

More hammers fluttered into the chamber and circled down on them. Barris fired at them wildly. "For God's sake, Fields, we're licked; without the bomb there's nothing we can do."

More and more hammers flocked around them. Barris fired desperately, crouching down against the wall. Two hammers dissolved in ash. He peered around. Fields had moved away. He was crawling across the chamber, toward the towering wall of dials and metal.

"Fields!" Barris shouted. "What are you doing?"

A hammer dived at Fields. "*Stop! Stop at once!*"

Barris burned the hammer to ash. The others left him abruptly and headed after Fields, screeching and screaming, diving at him in insane frenzy. Fields swarmed up the face of the cube, the great impersonal metal face. He disappeared into the maze of wiring that was *Vulcan III's* power supply. The hammers crashed futilely against the sleek metal sides of the great cube.

"*Stop him! Stop him, Barris!*"

"*Get him away!*" The ham-

mers darted frantically at Barris. *"Make him stop! Make him get away!"*

A DAMAGED hammer struggled across the floor toward Barris, its metal eyes gleaming. *"If you let him destroy me you'll destroy the world!"*

"Madman!"

"Monster!"

"Depraved beast!" The hammers struggled to reach Barris in a last desperate fury. A hammer slashed past him and burst apart against the concrete floor. Barris sprawled behind a massive support beam. Fields was utterly gone — vanished into the cube.

"Listen to me!" a hammer blared. *"While there's still time. This is insane. Get him away! He's killing me!"*

"We can agree!" the damaged hammer stated, trying to move toward Barris behind the support beam. *"We can agree on an arrangement!"*

"Please, Barris! Don't let him destroy me!"

"Make him stop! Get him away!"

"Barris! Barris! Please do not —"

From the intricate power supply that laced up the side of *Vulcan III* came a blinding flash of light. A loud *pop* and an acrid, burning odor.

The hammers wobbled; they hesitated in their frantic flight;

their sound ceased abruptly. Silently, the hammers spiralled toward the floor. One by one, dropping silently, they crashed to the concrete and lay still. Inert heaps of metal and plastic — nothing more.

The rows of lights and meters on the cube face died into darkness; the power hum failed and was still. The churning and whirring of *Vulcan III's* machinery, the glow of red, faded and were gone.

Vulcan III was dead.

FIELDS EMERGED, wiping his grimy hands and gasping for breath. *"It's over, Barris."*

Barris came shakily from behind the support beam. The chamber was incredibly still; none of the hammers moved. Barris kicked at one with his foot, dazed. The metal heap was utterly still — silent and unmoving. *"It happened fast."*

"No, it didn't take long. Once I was inside."

A pair of Barris' troops appeared at the doorway. *"You all right?"* one demanded.

"Sure." Barris nodded shakily. *"We're fine."*

"It's over. All the hammers died." The troops came cautiously into the chamber. *"Good God. Is that —"*

"It's him. Or it was him."

One of the soldiers advanced, aiming his pencil beam grimly. *"I'll finish the job."*

BARRIS stopped him. "Get back. Don't touch him; set up a guard across the entrance. I don't want anything to happen to him."

"But —"

"That's an order." Barris walked over to Fields. "Are you all right?"

The old man nodded silently. He sat gasping for breath and mopping his face. "That was quite a time." He sighed, and smiled suddenly.

More troops entered the chamber, dragging a gray-clad figure between them. Reynolds tore loose. "You destroyed him! You damn fools!"

"Take it easy," Barris said. "Sit down and shut up." He indicated Fields. "Sit down there, beside him; I have some things to make clear."

"You think we can survive without *Vulcan III*?" Reynolds demanded hoarsely. His right arm was tied up and bandaged. A deep cut over his eyes was still bleeding. "You've destroyed Unity. You're a traitor, Barris; you were working for them all the time."

"Them? The Healers? Barris now grinned ironically. "Fields wouldn't agree." He searched his coat pocket and got out a crushed package of ciga­rets. Watching Reynolds and Fields, Barris lit up thoughtfully. "I don't think either of you is going to agree with this."

"I've already agreed," Fields said. "I'll stick to it — the bargain we made."

"What are you up to?" Reynolds demanded.

"VULCAN III is dead. Finished. There won't be any more of him; from now on we'll be running things on our own."

"We can't," Reynolds said flatly.

Barris shrugged. "Maybe not. You don't have any faith in yourself, Reynolds; you don't think we can run society alone."

"We've always had —"

"I ordered my troops to set up a guard around the remains of *Vulcan III*," Barris said. "The power supply is gone. *Vulcan III* is dead, but the computing equipment is intact. We were careful about that. We made sure only the power system was destroyed, nothing more."

Reynolds was puzzled. "Why?"

"WE'RE GOING to keep what's left of it. We'll continue to use *Vulcan III* — as we used computers in the past, in a strictly advisory capacity. Not to tell us what to do; not to make decisions for us. *Vulcan III* will still function — but as a calculating machine, not as a living entity. And *III* won't be giving any more orders."

Reynolds struggled angrily. "Human minds will be substi-

tuted! Ultimate decisions will be made by humans!"

"That's right."

"But humans . . ." Reynolds broke off. "Humans aren't capable of objective thought." He hesitated uncertainly, a slow flush covering his features. "Like — like *Vulcan III*."

Barris laughed. "Like *Vulcan III*." Abruptly he dropped his cigaret and ground it out. "Let's get down to business. Unity will continue. The system of international control. Directors and trained technicians. We'll keep *Vulcan III* — the computing part, at least. Fields thinks we can cut *III* down to size, small enough so that *we* can take care of it. We don't want a repetition of this."

Fields stirred. "You also said —"

"The structure of Unity will be different. We'll broaden our base. *We have to*. Rational control of society is fine — until it becomes a cult of reason, a cult with the majority of people on the outside, too impure to join. It's time you stopped worshipping the system, Reynolds. Your religion is too exclusive; it excludes too many people."

"What are you talking about?"

"The cult of reason and science. For experts only — run by, and *for* technocrats. For those few oriented around formal knowledge, adept with symbols and verbal signs. Those who have

a facility with words and theoretical knowledge. Mind stuff — as if manual skills, bricklaying, pipe-fitting, weaving, sewing, painting, baking, weren't of any value. As if all the people who work with their hands, the skill of their fingers, their arms, the knowledge of their muscles, were riff-raff. Useless debris.

"YOU WONDER why farmers and masons and weavers and busdrivers hate Unity. Why they hate you and *Vulcan III* and everything the system stands for. I'll tell you why: Because they're out; because they've been excluded. A new aristocracy is ruling them — the educated technician. A new hierarchy, a new elite to take the place of the old. Originally, it was priests and warrior kings. Then the landed rich. Then the big urban industrialists. Now it's Unity — the system of the *bright young men*, with their slide rules and gray suits and pastel ties. The managers with education. Priests in gray."

"Nonsense!" Reynolds grated.

"Why should they serve you? You look down on them, aristocrats, the pure-blooded looking down on the rabble. As far as you're concerned they're a different race. Apes — living in a world run by educated technicians. Rational experts surrounded by animals in the grip of emotion.

"Both you and Fields are fanatics. Cultists. The cult of science on the one hand, the cult of emotion on the other. Gray priests, brown priests. Each of you has his own temples, his own dogma, his own gods."

"Gods?"

BARRIS INDICATED the great silent cube that had been *Vulcan III*. "We've smashed this god, Reynolds — your god; he's out of commission. Your modern god has been overthrown like the earlier gods, the deities of the past. You turned science and reason from a tool of man into a tyrant ruling over the human race. But that's over with, now. *Vulcan III* is no longer functioning. He's gone — and we're on our own."

"We'll have to rebuild," Reynolds muttered. "All the destruction and damage. All the loss."

"But no machines!" Father Fields gasped.

"Plenty of machines!" Barris snapped. "We're not going to scrap our tools. We're not giving up control of nature. We're not sliding back to the days of oracles and prayers. There's no substitute for a rational society of men who understand and control the forces around them. The experts will remain. T-class, Unity, the system will stay. And *Vulcan III* — but without authority and power. We'll keep *III*, too, but as a *tool*, an instrument — not a master

to whom everything else is subordinated. From now on we'll make all the decisions ourselves. Your god is gone, Reynolds. *All* the gods are gone. We humans will make the decisions on our own, without outside help. There'll be nothing above us but empty sky."

"You think you can put this across?" Reynolds asked.

"I don't know. Maybe Unity can't function without *Vulcan III* at the top; maybe men actually aren't capable of running their own society. But we're going to make the try."

"It couldn't turn out worse than this," Fields said, indicating the great silent mass of the calculator.

Barris turned abruptly to Fields. "How did you know so much about *Vulcan III*? You knew exactly where he was — and how to destroy him." His eyes were cold with suspicion. "How? How do you know so much about the *Vulcan* computers?"

FIELDS WAS silent a moment. Soldiers moved around the chamber, clearing up the wreckage. The first groups of Healers were beginning to trickle down from outside. Gray-clad Unity clerks and officials timidly poked around the remains of their offices, still dazed and uncertain.

"I can explain it best this way," Fields said; "I was the

electrician who wired up *Vulcan III* originally."

Barris let his breath out. "I thought so."

"It was under *Vulcan II*'s direction. I'm an old man. It was during the War — when I was young. We had only *Vulcan II* in those days. They wanted a bigger computer, one that could deal with ultimate values. They wanted its scope radically expanded. I had nothing to do with the designing, of course — the paper work, the schematics, were formulated and developed by T-class personnel."

"But you did the actual wiring."

FIELDS SMILED. "Yes, I did the physical work. *Vulcan II* was with me constantly, directing me; he — *it* supervised the entire project. I'll never forget those days; I was twenty-two years old, and a damn good electrician. *Vulcan II* picked me from the files over everybody else."

"That's why you hoped *Vulcan II* had been restored."

"We were very close, for awhile. *II* kept me on — as long as it could. As you know, *II* was discarded soon after *Vulcan III* was built — relieved of all authority. *Vulcan III* took over completely and I was dismissed."

"What happened then?"

"I lost contact with *II*. *Vulcan III* drove a wall between us; we were cut completely apart. Dur-

ing the years I tried repeatedly to locate him — but without success. *Vulcan III* had absolute control from the moment he was created. The damn monster pile! And then he wiped out *Vulcan II* to save his own hide. Without a qualm, the way he's killed all the others. Utterly without conscience."

"You knew nothing about Jason Dill?"

"NOTHING. We were cut apart too early. If only we could have coordinated! But *Vulcan III* had too much power; he controlled everything. *Vulcan II* had to be careful; *II* was in danger, constant danger. It had to proceed carefully."

"*II* was careful — but not careful enough."

"No. *Vulcan III* finally managed to get *II*; it was only a question of time. I think *Vulcan II* knew it; before I was dismissed, *II* tried to acquaint me with the realizations that were beginning to come to him. That *Vulcan III* was growing, rising — not a rational computer, a tool of man — but a living being. With his own drives, his own will to survive.

"*Vulcan II* saw this; *II* informed me, made me aware of it. *II* was astute, Barris; it watched and considered and laid cautious plans."

"Plans?"

"Consider the situation. *II* had

been totally removed from power. No one consulted it — except Dill. Dill was the only internal contact. *II* made use of Dill as best it could, gave him orders — orders to withhold all information about us, about the Movement of Healers. Thank God *II* lasted long enough to give those orders! If *Vulcan III* had found out about us earlier we wouldn't have had a chance.

"**V**ULCAN *II* must have been very concerned about that — afraid *Vulcan III* would find out about us too soon. We were growing all over the world, but against *Vulcan III* we would have been helpless. *Vulcan II* knew that; it manipulated Dill as best it could, used Dill to keep *Vulcan III* ignorant of the forces working against him."

Barris grinned wryly. "Dill obeyed the orders without understanding them or what they were for. Even after *Vulcan II* was gone. The product of a bureaucratic structure."

"It was a good thing for us, too. Time was needed — time for the Movement to grow. As you said, such a revolution is really out of date. But *Vulcan II* was counting on it, hoping it would succeed. Unable to contact me, shut off and virtually helpless, *Vulcan II* could only wait. It did what little he could — and waited.

"*Vulcan II* pinned all hope

on an out-of-date revolutionary Movement. If you hadn't stepped in, we would have failed. But after all, *Vulcan II* was out of date, too. A useless object, a relic out of a past age.

"In any case, *II* did what it could; originally it had supervised the wiring, obeying orders to faithfully actualize the schematics. It allowed construction to proceed without interference; that early *II* hadn't deduced the consequences. It was only later on that *II* found the answers.

"**Y**OU SEE, Barris, *Vulcan II* founded the Healers' Movement, was the guiding spirit behind it — *II* created it. I would never have developed the idea, the awareness of the danger, by myself. That's why I was glad to accept your conditions. You were working along the same lines, carrying on the work *II* started. You wanted to keep Unity — to keep *Vulcan III*, not as a master, but as an instrument to implement human will. *Vulcan II* recommended that. *II* may have been out of date, as you say; but that was *II*'s solution — the same as yours."

Barris considered. Abruptly he laughed. "Maybe you're right. Or maybe —"

"Or what?"

"*Vulcan II* was probably jealous of *Vulcan III*." Then he sobered. "No, not exactly. *II* wasn't alive and its attempts at

self-preservation were entirely impersonal; *Vulcan III*, and his potentialities were considered merely as possible impediments to *II*'s solving problems — the function for which it was built. But the effect, so far as we were concerned, was that of two scheming computers, plotting against each other. Did you ever think of that?"

Startled, Fields blanched. "I —"

"Two contending machines — each out to get the other, each lining up sides. *Vulcan III* had the Unity system; *Vulcan II* put together the Healers, Unity and Healers — both tools of computing machines."

FIELDS' COMPOSURE was gone. "Good God!" He paused for a moment. "But . . . why didn't *Vulcan III* bomb us with atomics?"

Barris frowned. "I wondered as soon as I realized that only chemical bombs were being dropped. Then it came to me — you know what a struggle it has been for us not to personalize the computers, how careful we were always to think and speak of *I* and *II* as *it*. And how quickly and easily we started to call *Vulcan III* *him*, as soon as we learned *III* was alive — in fact, once we started, Dill and I found our-

selves talking about *II* as if it, too, were alive.

"Well . . . *III* wasn't any kind of insane monster, out to destroy its makers; he was still doing what he had been designed to do — *with one alteration*. As a living thing, with a drive toward self-preservation, it had to destroy *some* humans, who were endangering his existence, in order to serve the whole of humanity as he was designed to do. That's one thing *II* and Dill accomplished by with-holding information; *III* deduced the existence of danger, but had not enough data to assess its extent before the clash started. After all, Larsen didn't have *all* the information to feed him. It would destroy humans, but not on any larger scale than the evidence indicated as necessary; it would not have panic-reactions, and destroy blindly . . . Chemical bombs seemed to be adequate for the initial effort."

"A great power struggle," Fields whispered. "So that was it."

"Yes — in a sense your group, Reynolds' group, and my group, too, were all *pawns*. But we humans came out ahead, anyway." Barris grinned. "You were an instrument of *Vulcan II*, Fields. Like Unity, your Movement was — *Vulcan's hammer*."





FORCES AND MEN

IN A RECENT issue of the *Saturday Review* (November 5, 1955), Allan Nevins explores the question, "Is History Made By Heroes?"

Very probably, most of us started learning history from the "great man" or "hero" standpoint, which places the individual above and beyond the complicated interplay of social, economic, ethical, psychological, etc., forces. We learned of George Washington's personal force of character and achievement and thought of him as a man who took hold of events and shaped them with his own indomitable will; we learned of Abraham Lincoln's perseverance, humility, and ability to lead men who seemed at the time to be of greater stature. It was not until

later that we began to discover, if we studied further, the social and economic, etc., forces which shaped Washington, and find that Lincoln spoke with a great deal of truth when he confessed, "Events have controlled me."

Prior to the present century, few historians and/or biographers considered the milieu of the 18th Century as more than the stage upon which Washington, etc., played his role, or considered Lincoln as a stepson of Destiny, rather than its master, however tardy his contemporaries might have been in appreciating the fact. But after the 20th Century's first world war, psychological reactions (combined with the impact of Hegelian dialectics, as modified by Karl Marx and others) resulted

in a spree of "debunking" biographies. Washington's virtues were not extenuated wherein he was worthy, as Brutus said of Caesar (according to Shakespeare), but it was made to appear that social and economic forces were paramount and that the American Revolution would have occurred — and probably with as definite success — anyway; Lincoln's tormented psyche was explored, while the man himself was relegated to the role of steward of economic and social determinism, etc.

ATTITUDES TOWARD history were split into two camps, with a near-Aristotelian either-or division between them. I say "near-Aristotelian" because the adherents of the "hero" camp didn't really consider the environment completely irrelevant, nor did the "dialectic" side deny the fact of a given individual, in a specific position at a specific time, having some weight. The "social forces" adherents maintained that events brought forth the type of man which was required.

Fiction, particularly the fiction of the past three decades, has shown the impact of these attitudes; the impersonal forces school has had quite an ascendancy, resulting in the "protagonist-victim" replacing the "protagonist-hero" to a considerable extent. (In serious fiction, that

is; popular fiction, from western, etc., books to the pulps maintained the all-conquering hero much longer.)

Now science fiction is different from most mainstream fiction, among other respects, in that while mainstream fiction is imaginary *biography*, science fiction was, at first, imaginary *history* — the history of great inventions, great explorations, great catastrophes, great wars, etc., seen through the eyes of the heroes who shaped and controlled them. There was the lonely, dedicated — and usually embittered — great man (such heroes as Robur the Conqueror, Cosmo Versál, etc.); the idealistic hero-scientist (such as Richard Scaton, Tom Swift, etc.); and the hero-adventurer, (such as John Carter, Miles Cabot, etc.). In many of the great catastrophes and wars, the hero appears only as a *deus ex machina* to bring forth the great invention or the weapon which saves doomed humanity, or what is left of it, at zero minus one.

IT IS common to label such heroes these days as "stereotyped"; but to dismiss them with this one phrase doesn't exactly explain the reason that they are passe. While many of them were indeed cardboard cutouts, contemporary readers could believe in them nonetheless — because they were *acceptable* stereotypes;

they were more or less skillfully presented archetypes of the readers' beliefs and attitudes about history and the way the world worked, or should work. (In the same way, the haunted castles, ghosts, ghouls, vampires, etc., of Gothic Romances, and their successors in weird fiction were stereotypes — quite acceptable both to the elder generation who believed in them, and the younger generation who enjoyed suspending disbelief for the sake of titillating shudders, until the impact of scientific warfare and the atomic age made acceptance impossible.)

When existing stereotypes in fiction begin to wear thin, the first reaction is toward improving them rather than discarding them. Thus, in science fiction, around 1930, we saw the trend toward alignment with popular fiction of the time. This included more universally adopting the plot-forms of general pulp fiction (exemplified by Clayton's *Astounding Stories of Super Science*, and the injection of "mystery, adventure, romance" into *Wonder Stories* and *Amazing Stories*). Then followed the trend toward more "realistic" characterization — which amounted to making the hero talk a little more like the educated man in the street and threw out most of the Victorian dialogue, etc., which still abounded in the current works of such au-

thors as Austin Hall. There was also a trend toward more picaresque characters (as exemplified by Giles Habibula in "The Legion of Space") and heroes who had much more trouble defeating the opposition. Somehow, Richard Seaton never seemed to be in any real danger in the "Skylark of Space"; John Star, however, and his companion legionnaires found themselves in horrible jams wherein they couldn't (or didn't) dream up new inventions and weapons on the spot but just laboriously and painfully made do with what they had at hand — and with a truly breathtaking lack of credibility. Even at the time it was difficult to believe that anyone could undergo the privations described on Yarkand.

Fiction, unfortunately, cannot be as incredible as fact; reading Cecil Woodham-Smith's "The Reason Why," some months back, left me with the feeling that this thoroughly-documented account of the Crimean War topped all the fantastic fiction I'd ever come across. The most flabbergasting thing about the charge of the Light Brigade was that these men, half dead of cholera, were able to mount their horses and charge anywhere at all.

THE CAMPBELL ERA in science fiction brought forth further improvement of the stereotypes

— more realism in background and characterization, more believable motivations. But the protagonist was still a hero, still an individual contesting and eventually triumphing over the forces against him. And if he died at the end, as did Lt. Ron Hubbard's Lieutenant in "Final Blackout," he died in the grand manner — like Samson, bringing down the Philistines with him.

One reason why science fiction has had small acceptance and circulation, is that it lagged behind the change of stereotypes in mainstream fiction (the shift from protagonist-as-hero to protagonist-as-victim, which started in mainstream fiction in the '20s) and that science fiction, by its very nature, lies outside the interests of most readers of popular fiction. Improving stereotypes broadened the appeal, but at best science fiction magazines never sold as widely as westerns and detectives in their field days. For the most part, it could not seriously interest persons whose educational and intellectual levels were high enough to appreciate it at its best. A survey of the question hasn't been made, to my knowledge, but my guess is that the majority of science fiction followers do not have catholic tastes and backgrounds in other types of literature. (I do not exclude the liberal arts student reader and the well-read

fans of the present day; I merely suspect that they are a minority.)

THE PROTAGONIST-VICTIM attitude in fiction arises from the dialectic, "impersonal forces" outlook on history, derived from study on the part of initially-influencing writers, from personal experience of readers who went through depression and war, etc., and from following what seemed to be the main chance on the part of subsequent writers. The insipid "common man" protagonist and the protagonist-as-psychopathological-case-history both derive from this base. Neurotic determinism followed in the wake of economic determinism, as events began to prove that collective ownership of the means of production, etc., didn't abrogate all the evils of "capitalism."

Numerous historians, however, have learned that history is a synthesis of individuals and forces; that the "great man" does exist, but is shaped by forces, is dependent upon innumerable lesser men around him to a great extent, and is capable both of controlling and being controlled by events. Whoever said that Winston Churchill has one of the greatest minds of the 19th Century may have imagined he was dealing a crushing epigram. Not so; assuming its accuracy — and I think the mot has a

great deal of justice — implies certain definite strengths as well as weaknesses. And what the jester did not realize was *how much* of the qualities which we call "Victorian" are still not only appropriate and applicable in current statesmanship, but also desirable. The events have proven Churchill right in an embarrassing number of instances where, by 20th Century standards, he was ludicrously wrong. Partly because the great Victorians had an understanding of human political behavior — which has not changed to conform with 20th Century opinions of it.

THE MAIN point being that the "great man" attitude toward history has led to primacy of the individual, and the "impersonal forces" attitude has led to de-personalization of the individual, what attitude should synthesis foster? The best example I can think of for a suggestion is "The Good Soldier Schweik",

despite its age. Schweik is the protagonist, and he is distinctly an individual in his own right; he is set upon by forces greater than himself, but is not the victim — even though he might appear to be. Without any super-human and unbelievable feats, he adapts himself in his own manner and triumphs by his own standards. Now, obviously, all protagonists can't be Schweiks; we want to read about protagonists who are able to exert more direct control over forces and events than that. And accepting the existence of exterior and interior forces which shape events —irrespective of the individual's intentions, desires, or actions — we cannot make our protagonists all-around, full-time *heroes*. No such mortal has ever existed — but all manner of men and women have, at times (and at some of the most unlikely times) performed heroic acts.

The new stereotypes, then, won't be either Superman or Sad Sack.



The best way to insure that a messenger can't deliver secret information to the wrong person is to arrange things so that he doesn't have any idea what the message is.

CODE IN THE HEAD

by Randall Garrett

Illustrated by Kelly Freas

THE DIRECTOR said, "That's it; they can't unlock it without burning you out, and if they do that, they'll never get it."

I still felt groggy, but I reached out and took the cigaret out of the old man's hands. "Sure," I said, "I'm glad of that."

He got the sarcasm, but his expression didn't change as I took a deep drag of smoke. "When you leave here," he said, "you won't even remember this conversation until it's keyed in. But it is important that you remember it later. Got it?"

I nodded. "I've got it," I said. And I knew I had.

The Director's heavy, lined

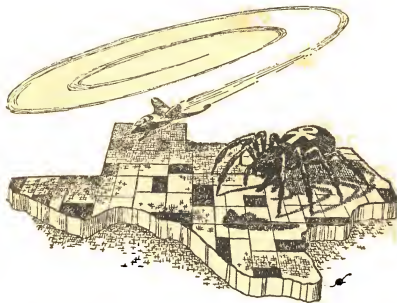
face broke into a sardonic grin. "Here's your weapons," he said ungrammatically; "they're all you get."

And he handed me the packages. "Now get going."

TWO HOURS later, I was on a jet transport for Texas, in Southwest Territory.

I should have known that Senator Lasser would be on the lookout for anyone headed for Texas, and I should have known that the lookouts would be watching for any opposition. But I didn't actually spot the group until we were well over Pennsylvania.

There were five Senators left. When longevity treatments had



been discovered, they were expensive as hell; and the decision had been to give them to those who deserved them — by popular vote. Naturally, the treatments had gone to those who controlled the vote. That went without saying.

Originally, there had been fifty-two Senators. But as each one's territory had been vacated by violent death, his neighbors took over until now, after years and decades of intrigue, five Senators controlled all of North America.

There was only one Immortal that the Senate didn't know about — the Director of the FBI. And his sole purpose in life was to see that the country

which had once been the United States eventually regained its freedom to vote and act as it chose.

I, personally, consider it to be a rather silly ideal, but, what the hell, I'm an FBI man; I follow orders.

I had no more idea why I was going to El Paso than the man in the moon does, but I knew that I'd know when I got there.

The thing that made me grin was that all five of the Senators were watching me so closely. One of them was scheduled to die, but none of them knew that for sure — and they all thought it was another of the Senators that was planning the death. None of them suspected the

feeble, worthless Federal Government.

They did, however, know that *someone, somehow*, was transporting important information to El Paso — and they had somehow managed to narrow it down to this particular plane.

I LOOKED around at the other passengers. The boys were easy to spot — all five groups of them. Each Senator had sent three men, and I had spotted them all from their pics in the FBI files.

*Fifteen men on a dead
man's chest,
Yo, ho, ho and a bottle of
rum!*

And the only ones that would be on my side in a toss-up would be Senator Lasser's men — only they didn't know who I was, any more than the other twelve did. I wondered how the opposition was going to try to get the information before this jet landed at Briggs Field.

Frankly, I wasn't too worried. In the first place, they'd find it hard to spot me; in the second place, they'd have to know the key word or phrase that would unlock my subconscious and release the information that had been hypnotically planted there. Until then, I wouldn't have any more idea what it was than they did.

I settled myself into my seat and tried not to look as though I were trying to be inconspicuous. There was no one in the seat next to me. The seat in front of me held two of Senator Grendon's men; the third one was two seats further up. The seat across the aisle held one of Senator Lasser's men and one of Senator Rowley's. There were two women, probably mother and daughter, in the seat behind me. The rest of the hatchet men were scattered through the plane. I wondered how many of them knew each other; and I wondered if any of them had spotted me.

I GOT UP quietly and strolled down the aisle to the big door that opened into the right wing, where the bar was. Nobody arose to follow me, but one of Lasser's agents was already at the bar, arguing with the barkeep.

Only in a stratoliner can you still find human bartenders; weight considerations forbid installing robot mixers. The only robot on one of those babies is the pilot.

"The proper method of mixing a Martini," the mild-looking young man at the bar was saying, "is gin and vermouth at a ratio of three point seven seven to one. And don't use an olive; it spoils the flavor — the vinegar, I mean."

The bartender nodded sagely and began the ritual of mixing a Martini properly for a Martini nut.

"I'll have one, too," I said. Then I added: "Mixed his way," and jerked my thumb at the Martini nut.

The Martini nut smiled his thanks, and I smiled back, which gave me a chance to look the guy over. He didn't look like the "typical" stage Texan — but then, what Texan does? He looked very mild and inoffensive, but I knew him for one of the deadliest men in the Texas Rangers. He was probably armed to his armpits, and it was kind of nice to know that, in case of a fracas, he would be on my side.

He wore a Lincoln beard that framed his rather chubby face in a wreath of blond hair; his tunic, with the cowl thrown back, was a pale mauve, and hung loosely enough to hide a small atomic cannon.

"I see you're a connoisseur," he said, grinning.

"Not exactly," I said modestly, "but I do like a good Martini." I plonked myself down on the barstool and suddenly put my right hand inside my tunic. I pulled out my cigaret case.

THE TEXAS RANGER had reacted rapidly. His own hand was inside his tunic, and he had almost pulled his gun when he

saw that I was taking a cigaret case out. He covered fast; his hand fumbled for a moment, and when it came out, it held a lighter.

I accepted his light and offered a cigaret. The trick had shown me two things — maybe three. One, I could outdraw him if necessary; two, he was jumpy as hell; and — possibly — he didn't know who I was.

We sipped our drinks in silence. I knew I probably had him guessing, but I didn't want to confirm any of his guesses just yet. I ran the smooth juniper-and-spice flavor of the Martini around in my mouth and did some figuring.

In the past century or so, the FBI had become a sort of messenger service; the Federal Government no longer had any power — at least, in theory. Actually, the Director *was* the Federal Government. And, as I've said, his sole object during his long life, has been to get rid of the Immortals. To do so, he has probably pulled some of the most scheming, underhanded, and murderous tricks in history. He makes Machiavelli's "Prince" look like a kid trying to lie to his mother.

ONE OF the Immortals was due to be removed at some time in the near future, and the word had gotten around. Naturally; the Director had seen to

that. The trouble was that no one of the Senators knew which it was to be, or who was plotting against him. Each one suspected the other four, which was just the way the Director wanted it; they must never realize that it was the Director himself who was rubbing out the boys.

Waterford, Senator of America South, and Anthony Rowley, Senator of Northwestern Sector, had a communication line which stretched across the continent, crossing Eastern Sector Senator Grendon's territory, and touching a corner of Lasser's territory where it clipped off a corner of Texas.

Waterford and Rowley kept shifting the tight beam so that the others couldn't get too good a line on it, but they also had to have a variable code that would keep anyone from knowing what was going on, even if they tapped the beam.

The code consisted of a pair of synchronized electronic scramblers with a variable pattern. The messages went in one end, were scrambled, went through the decoder at the other end, and came out in the clear. The trick of tapping the beam would be to get the scrambler pattern, which is a job that's impossible to do by trial-and-error tactics. Theoretically, there were an infinite number of possible codes available, but the structure of a variable scrambler limits the pos-

sible variations to a finite number. Nevertheless, the number is big — something like ten to the two hundredth power.

And somewhere, buried in my subconscious, was the key to the scramblers. Just how the Director had found that information, I didn't know, and I didn't care; my job was to deliver it intact.

SOMEONE SAT down at the bar next to me. I looked up casually, then looked back at my drink; it was one of Grendon's boys — a heavy-set, bull-like, full-bearded bruiser who looked as though he ought to shake the plane when he walked, and who actually moved more like a cat than a cow.

None of them knew what information was being carried, of course; the Director was sure of that. And only Lasser's men knew that it was meant for Senator Lasser.

The others were suspicious of the direct route that the information was taking. Direct, yet indirect. I was taking the stuff to El Paso, but Lasser was in Austin. Grendon, Quintell, Rowley, and Waterford all thought that looked a little fishy. It couldn't possibly be meant for Lasser; the trip was a blind.

Everybody was confused, and that was just what the FBI wanted.

Another man drifted into the

bar, and I began to feel a little fidgety. Was it possible that they had me spotted?

I decided to check it. I ordered another Martini and left it on the bar while I went back to the men's room. Nobody got up immediately, but I hadn't expected that, anyway. I pushed open the door and walked into the rest room. The door hissed shut behind me, cutting off the noise in the bar, leaving only the subsonic beat of the rumbling jet engines throbbing through the metal of the floor.

I took a good look at myself in the mirror, hoping that my nerves didn't show. They didn't; the neat, brown Vandyke beard and wavy brown hair bracketed as calm looking a pair of gray eyes as I ever want to see on my own face.

I checked my watch. According to the shadow hands, we had less than an hour and a half to Briggs Field. Once there, I'd be safe.

THE DOOR pushed open behind me. It was the Martini nut. There was no chance of my outdrawing him now; a heavy .20 caliber pistol was pointed at my midsection as I turned. "Just stand still, and you won't get hurt," he said mildly.

I was in no mood to argue. A twenty caliber hole may be small according to measuring instruments, but when it's pointed

at you, and you know that a high-velocity magnum bullet could come roaring out of it at any time, it begins to look pretty big.

"Turn around and lean against the wall," he instructed; "put your hands out to brace yourself."

I did as I was told, and he began to go through my clothing with his left hand, keeping the magnum pistol trained on the small of my back with the other.

Within a few seconds, the contents of my pockets were spread out on the lavatory basin. He didn't seem satisfied; he kept on patting me down, looking for something that wasn't there. I wasn't carrying a gun.

Finally, he looked at the stuff he'd taken from my pockets and said: "Key ring, pack and a half of cigarets, wallet, roll of mints, chewing gum, nail file, comb, and handkerchief. Plus eighty-five cents in change. No gun?"

"No gun," I said; "that's illegal."

"So are a lot of other things." He flipped open my wallet and read the identity card after checking the little gold badge set into the plastic of the wallet.

"I wish I had a checker," he said softly. He wanted to compare the card with the tantalum identity plate that was riveted to the bone of my left forearm. I wasn't worried; even if he had had a supersonic check beam,

the plate and the card would have matched.

"Okay," he went on, "put this stuff back in your pockets. I'll have to take a chance on you."

I DID what he told me, stowing the stuff away carefully. "Who are *you*?" I asked, as though I didn't know.

He reholstered his pistol and took out his own wallet. "Captain Roger Brill, Texas Rangers."

The card in his wallet confirmed it. "Okay," I said. "Now, what the hell's the idea?"

"I'll give you a quick run-down," he said. "We won't be disturbed; my partner's in the foyer."

"You're carrying certain information to Senator Lasser. I don't know what it is, and I don't care; my job is to get you to the Senator alive. But a hitch has developed. There are at least two of Grendon's men and one of Quintell's aboard this ship. They've got something up their sleeves, and I don't like it."

"I don't like it any better than you do," I said. And I must say that that was a definite understatement. The Director was always tossing me into situations like this; he likes to engineer little messes, like a kid putting all the chemicals in his chemistry set together just to see what happens. Actually, that's unkind; the Director usually knew pretty

well what was going to happen, but he never told me or any of the other boys what it was.

The Ranger's porcelain blue eyes narrowed as he looked at me. "The only trouble is that we have reason to suspect that Grendon's men know the key word that will unlock your hypno block."

I liked that even less. I'm glad I wasn't looking at my face in the mirror when he said it.

IF WATERFORD's men, or Rowley's, ever found out what the information was, it would be useless to Lasser. All they would have to do would be to change the patterns on their variable scramblers. It would be expensive, but it would be done just that way.

I looked again at my watch. "We'll land in eighty minutes," I told him. "That doesn't give them much time to act. Do they know who I am?"

"I don't know; I think —"

The door burst open, interrupting him. He had his gun free, but he didn't fire.

The guy at the door was a tall, lean, lanky, lantern-jawed character whom I recognized as another of Lasser's men.

"Captain," he said, "someone has gimmicked the robopilot. The goddam plane is going around in circles. We haven't been goin' nowhere for the past ten minutes."

He talked fast, but it still came out sounding like a drawl.

The Ranger shoved his pistol back inside his tunic. "Who do you reckon it was?"

"Don't rightly know. Grendon's boys and Quintell's man are all in the bar."

Captain Brill frowned, so I decided to enlighten him. "Waterford and Rowley have men on the plane, too," I said.

"Judas!" said the tall man, "it's a convention!"

Brill turned to me again. "Do you want a gun? You may need it."

I SHOOK my head. "'It is illegal for a member of the Federal Bureau of Investigation to own, carry, or transport firearms,'" I quoted. That was one of the Director's cute little tricks to keep the FBI looking innocuous. He'd actually helped get the law passed fifty years ago, with the full intention of paying absolutely no attention to it.

The Captain sighed. "Looks like we'll have to watch the poor guy ourselves, MacTavish," he said to his partner.

"Shall I get hold of Jackson?" MacTavish asked.

Captain Brill thought a second, then shook his head. "Nope. We'll sort of keep him in reserve. He can cover us. I don't think anyone will recognize him."

MacTavish rubbed his clean-shaven chin and then fondled the long handlebar mustache that adorned his upper lip.

"What do we do next, Captain?" He pronounced the title "Cap'n."

"I think we'll sort of mosey down below. We've got to get the plane moving towards El Paso again. If somebody's gimmicked the robot, we've got to ungimmick it. Come along."

MacTavish left the men's room first; I followed, and the Captain brought up in the rear. We tried to keep together without seeming to *be* together.

CAPTAIN BRILL and I went back to our Martinis, and MacTavish ordered whiskey when he sat down at the bar two seats away. We finished our drinks and casually headed out of the bar. We walked through the seating compartment, moving toward the tail of the ship, where the door to the pilot's compartment was.

None of the passengers seemed to be aware that the plane wasn't going anywhere, and I suddenly wondered if the taciturn MacTavish had been right about our traveling in a circle.

"There probably is only one of the Senators in on this idea," I whispered softly to Brill.

"Sure thing," he said; "but which is which?"

Which is which? I thought.

Witches-witch. Now why had a pun like that occurred to me?

Just as though we belonged there, we walked up to the door that was marked:

*Unauthorized Persons Keep Out
Robotics Personnel Only*

The Ranger touched the opener, and, at that moment, I heard the faint *chug!* of a stungun going off. I started to look, but Captain Brill's whisper sounded hoarsely: "Don't turn around. MacTavish just beamed down one of Grendon's men in his seat. It's evidently Grendon who's behind this. Nobody's noticed anything at all. Keep going."

The door slid open quietly, and we walked in. A stairway led down into the depths of the ship where the robot brain of the pilot was located. "Looks like they've opened the door somehow," MacTavish said laconically after the door had slid shut behind us.

"I don't like this," I said.

"You shouldn't, precisely," said a voice behind us that I can only describe as silky.

I heard a *chug! chug!* and nothing more. The third *chug!* of the stungun was the shot that got me.

I CAME UP out of it like a man who comes up toward the surface of a pool of water. The

stunner had knocked my nerves haywire, and it took a little time for my vision to adjust. The nerves all over my body felt as though they were being burned; my arms and legs felt as if they were dead.

I soon found out why. When the shock finally wore off, I found that my arms and legs were clamped in magnetic cuffs. I couldn't move.

I knew I'd been out less than an hour — fifty-five minutes, say. I'd been hit by a stunbeam before, and I knew how long it took my body to throw off the effects.

The guy facing me had the most magnificent silky blond beard I'd ever seen. I didn't recognize him; he was evidently one of Grendon's men who had been kept in reserve.

He looked at me and grinned. "Hi ho," he said. "The strong are the first to rise. Give us, dear boy, no reason to give you the stun again."

I recognized the odd accent then. The man was a Britisher. Ever since North America has cut itself off from Europe, the bombed-out survivors of the Third War have been developing a different way of speaking English. Evidently, Grendon was importing some of his expert gunmen.

"Do you feel like giving an answer or so, old boy?" he asked, still aiming the stungun.



I LOOKED at him for another second and then shifted my eyes to the two men on either side of him. Grendon's, all right; the third one must have been at the top of the stairs, guarding the door.

Then I shook my head. "No answers," I said; "I don't know any."

His eyes narrowed, but the grin stayed. "Look here, old bacterium, you have an information or two that we need. You have several items we want. As a matter of fact, there's no item we *don't* want."

There's no item —

There's Snow White — um . . .

I shook my head — this time because I felt dizzy.

"Keep your mouth shut, Fed," said a soft voice next to me. It was my pal, Captain Brill, the Martini nut.

"The same to you, old slime," said the Britisher "Now that we know which of the three of you is our Federal Agent, we have no need of your conscious pres-

ence whatsoever. One more wriggle of that fringe beard, and I shall give you what-for."

Meanwhile, I was gently probing for the package of mints in my tunic pocket.

"That was a neat trap," I said, to cover up what I was doing.

The Britisher grinned even wider, showing fine dental work. "We thought so. Very simple. Start the old ship to going 'round in circles, and the people who are most anxious to get to *El Paso del Norte* will be the first to show. And that, naturally, will be the blokes we want. You."

THEY HAD patted me down, but they hadn't taken anything out of my pockets except my wallet. They knew I was the FBI man they were looking for.

I still didn't have my hands on the mints.

"Gentlemen, please," he said. He glanced at the men beside him. As if they were both controlled by the same circuit, they pulled stunguns.

"You reckon they can get anything out of you, Fed?" The voice belonged to MacTavish, who was manacled somewhere to my left.

The Britisher with the blond beard looked exasperated.

"Really," he said, "interruptions are impossible." He flicked his left hand in a gesture. "Beam."

Chug! Chug! The two stunguns wielded by his buddies went off almost as one; that put the two Texans back to sleep.

"Now let's get on with the business," said the Britisher; "I will begin by asking a few questions."

That was when I knew why I hadn't recognized my English friend as a Grendon agent; he was a psychologist, not a gunman.

By this time, I had the package of mints in my hand. I was sorry I couldn't reach the cigaret package — it was a neatly hidden stungun that would have been effective within ten or fifteen feet. The chewing gum package would have fired one deadly charge. But I'd have to be satisfied with the mints — which was just as well.

I WAS ALL ready to crush one of the mints when the Britisher said: "*Take the poisoned apple and eat.*"

For a brief second, I saw very clearly the room surrounding me. I could see the blinking signal panel of the robot pilot, the dull gleam of the multigold computing bank behind it, and —

And then I started talking.

I couldn't help it; that's the way the orders had been implanted in my mind. When the key is given, you talk.

But, even in my robotic state

of mind, the words sounded funny:

*"Mirror, mirror on the wall,
Who's the farthest of them
all?"*

That's what I said, word for word. It didn't make sense for me, and it didn't make sense for the British psychologist. He just stood there looking at me, and so did his two henchmen.

"What else?" he asked finally.

"Nothing," I told him; "that is all there is."

He glanced again at the two men flanking him, and then he got mad. He reached down and grabbed the collar of my tunic and jerked my head off the floor.

"You're lying, you son of a —"

And then all hell busted loose, drowning out his voice.

The Texan who had been covering for Brill and MacTavish appeared on the stairway. He didn't bother to ask questions; he started blazing away with his stungun. The Britisher fell, and so did one of the men with him. Then the other Grendon man fired at Jackson, who tumbled down the stairwell like a ton of bricks.

Suddenly, a couple of women appeared at the top of the stairs. They pulled out stunguns and started firing at anything that came within range.

Somewhere in the *melée*, a stunbeam hit me amidships. I was out for the count — of about ten thousand.



SENATOR LASSER was saying: "Son, you've delivered the goods."

Somewhat, I nodded and said: "Yeah, sure, thanks."

I looked around. I was in the palatial suite of the *Cortez Hotel* that was reserved for the Senator and his aides. I recognized it from pictures.

"What happened?" I asked. I didn't have time to be original.

Senator Lasser, with his white beard, looked like the typical Kentucky Colonel — without the Mint Julep. Lasser was holding a beer.

"Son," he said, "I reckon you've done me a big favor, even if the stunners have addled your brains."

"Sure. Thanks. How?" He was right; my head still wasn't reacting too well.

"Why, what's the trouble, son?"

So I told him. "My head hurts, my side burns, and my legs feel like —"

"Like they were dead," the Senator finished for me. "Sure they do, son. They've been hit a couple times with a stunner; and somebody evidently kicked you in the side."

THEN I knew what had happened. Someone had smashed the package of "mints" in my pocket — and the whole bunch of gas bombs had gone off at once.

"When the plane landed at Briggs Field," the Senator said, "you were the only one aboard who was in ambient condition; everyone on the ship except you was sound asleep. How did you manage to get the robopilot straightened out?"

"Damned if I know. I was probably pretty groggy. Actually, fixing up the pilot would have been easy; all I had to do was re-establish communication with the ground and the pilot would take over again."

"Evidently, that's what you did. I had a couple of girls aboard to help Captain Brill protect you. We found them out cold at the top of the stairs to the pilot's compartment. You

were sitting there saying something about a mirror on the wall."

I nodded. "Yeah. That was one of the Director's devices to make sure you got the information you wanted. Did you find it?"

The old man nodded. "We did. Your superior told us that the specifications on that variable scrambler would be on the plane, but he didn't say where. The rest of the boys assumed it was information you could carry in your head, but all you were carrying was the location of the plans. They were behind that big mirror in the men's room. You were acting as a sort of decoy; as long as the other Senators'

agents were concentrating on you, they wouldn't think to search the plane physically.

"I'm ready to cut in on that tight beam line now, thanks to the FBI. You did a fine job, son. A fine job."

"Thanks," I said. I hoped the hypno treatment hadn't permanently fuddled my mind. I didn't want to go around making puns on Snow White and the Seven Dwarfs the rest of my life.

"You've had a tough time, son," the old man said. "Go to sleep. You'll breathe better since I took the gas filters out of your nose. Go on, go to sleep."

"Thanks," I said doped. "I will."

I did.





ONE MAN'S INCH

by Richard Wilson

Illustrated by Emsh

When Vasily Budayev discovered the shrinking process, who'd have guessed to what hilarious uses the State would put it?

VASILY BUDAYEV had made this thing and now he didn't know what he should do with it. If it had been developed during the regular working day there would have been no problem. The Comrade Section Chief would have gone with it to the Political Commissar, and it would have been out of Vasily's hands. He might never have heard of it again, perhaps, until the Commissar had won a Stalin Prize for it.

But Vasily had developed it on his own time, after hours, working sometimes in the laboratory, and sometimes in a cor-

ner of the apartment which he and his wife and two children shared with another couple and their three children. Of course it was not right to call it his own time; all time was the People's time and should be utilized for the greater glory of the State.

Nevertheless, Vasily had made it and it was a problem.

What he had made was a substance that shrank. Many things shrank, of course — his shirt collar was choking him even now — but his substance continued to shrink indefinitely.

The substance, basically, was cotton cloth, and he had treated

it with what he had originally thought was a dye solution. The swatches had come out a vivid red, a thoroughly acceptable color. But they had also shrunk.

Vasily did not really notice the shrinkage until a month or so after he had hung a long red strip of the cotton on the wall of his apartment. He had tacked one end of it high up and the other end hung down to within an inch of the floor. But a month later, or perhaps six weeks, when he looked again he saw that it was two inches from the floor. He measured. No, an inch and three-quarters. Still . . .

IT SHRANK more slowly after that, but steadily. Masha, his wife, swore to him that she had not been tampering with the long red strip and that the children had not touched it. Nor had the neighbors, who lived in the apartment's second room, at the other side of the kitchen between.

Reassured, Vasily Budayev went to work again. He made another red strip and used an untreated white strip, of the same length, as a control. Then he weakened the solution and made a blue strip and hung it beside the other two.

Something was wrong. Vasily was not political-minded and it took a moment for him to realize what it was. He looked around nervously to see if any-

one else had noticed the red, white and blue strips hanging over his workbench. Apparently not; he ripped down the blue strip and substituted a black one.

Vasily's tests took some time, but when he had finished running them he had controlled the shrinkage to the point where he knew that a strip of cloth fifty inches long would diminish by exactly one inch a year — indefinitely.

But of what commercial use could such a thing be? Vasily did not know. Now if it had been something that *grew* an inch or more every year. . . . Even he could see the possibilities in that. A strip of gold, for instance. But a process that shrank things was probably worse than useless. If it became known, he might even be found to have committed a crime — wasting the resources of the State, perhaps. It was possible.

THE PROBLEM was too big for him, a simple research worker. He would take it to Piotr Serov and have done with it.

"Piotr," he said, but saw immediately that this had been a mistake. Piotr, who had just been visited by the District Commissar, impressive and angry in his Zis limousine, was not in a good mood.

"You will address me as Comrade Section Chief, Comrade Research Worker!" Piotr Serov

bellowed, "There has been altogether too much laxity lately in this matter, just as there has been a slowing down of our research program."

"Yes, of course, Comrade Section Chief," said Vasily. "But it is not always possible to measure research in terms of a production quota."

"I know this as well as you, Vasya," Piotr Serov said more softly. "Better. But does the Comrade Commissar know it?" He moved his hands in a weary gesture. "We do our best to explain to him what we are doing so he can make a good report, but he does not understand. Therefore his reports are sometimes pessimistically phrased."

"It is a problem, Comrade Section Chief."

"Call me Piotr," said Piotr Serov; "he has gone. He was angry because his district was specifically mentioned in an article in *Trud*. Need I add that the mention was unfavorable?"

Vasily said nothing. Such matters were beyond him.

NOW THAT Piotr was calmer, Vasily told him about the shrinking solution. But Piotr immediately became less calm. "To be frank with you, Vasya," he said, "I don't know whether this is good or bad. As far as I know, it is absolutely new. Why couldn't you have made something that one of the decadent

capitalistic nations had invented first?"

"But why?" asked Vasily Budyayev.

"Because then," replied Piotr, "after they had invented it *and found a use for it*, we could have developed the same thing and known what to do with it."

"Yes, Piotr," said Vasily reasonably, "but then we would not have invented it first."

"You do not understand, my little one. We could then show that you had been working on the process for a long time — since 1935 perhaps — and *Pravda* would print an article about the brilliant Soviet scientist who had developed this thing more than fifteen years before the decadent West had an inkling of it."

"I see," said Vasily; "of course. You are brilliant, Piotr. It is no wonder that you are our Comrade Section Chief."

"Perhaps," said Piotr Serov modestly. "But still you have presented me with another problem to add to the long list I already possess."

"I had hoped you would be pleased with what I have done," Vasily said. "But if it embarrasses you it might be better if we both forgot about it — at least until such time as one of the decadent capitalist countries invents a shrinking solution and learns how to use it."

"That may be, but it is not

for us to say. We must take the problem to the District Commissar himself and let him decide. The sonner the better. Come."

"If you please, Piotr," said Vasily, "I have so much work —"

"Nonsense!" boomed Piotr. "We will go together. There is always the chance that the Comrade District Commissar will be displeased with this shrinking thing and it would be better for him to be displeased with a simple scientist than with the Section Chief. You can understand that now, Vasya, can you not?"

"Of course," said Vasily Budyev miserably, and he went to get his hat.

THE COMRADE COMMISSAR was not happy to see the Section Chief so soon again, and he was still less happy when he learned the reason for the visit. He pulled on his full, drooping mustache and looked up at a large photograph on the wall of another man with a full, drooping mustache, as if for guidance. None came.

He examined the strips of red, white and black cloth the two men from the laboratory had brought him. He pulled at them. He measured them against each other. He frowned at the differences in length. He smelled at the cloth, bit it, cut off a little piece and burned it, and finally

threw the strips on the desk in a heap.

He asked many questions and received all the answers that were available, but they weren't enough.

Finally he told Vasily Budyev and Piotr Serov to go back to the laboratory and continue their work until they heard from him. He would have to make a telephone call or two. Perhaps even to Moscow.

He said it with a frown and Vasily and Piotr shuddered a little.

"You are not displeased with us, Comrade Commissar?" asked Piotr.

"We shall see, Comrade Section Chief," he said. "We shall have to see."

MONTHS WENT by and nothing was heard.

Vasily trembled when there was a knock on the door of his apartment one evening, but it was only Piotr, alone, carrying a bottle of vodka. The Commissar had said nothing in all that time, and Piotr needed the company of the only other man who knew about the mysterious strips of cloth.

Vasily shooed his wife and children into the neighbors' room on the other side of the kitchen and he and Piotr did justice to the bottle. They were laughing, and singing songs of their youth by the time the bottle

was empty; but in the morning it was just as bad, the grim waiting.

Then, on a frosty morning early in spring, a plane of the Red Air Force landed outside the village. The word spread quickly. It had come from Moscow!

For Vasily Budayev.

Vasily had never been in a plane and he did not enjoy the trip. He probably would not have enjoyed it anyhow, because the men who sat with him in the bucket seats in the back were not pleasant company. Grim-faced individuals, all of them. He was not introduced to them and so did not know their names, but he learned to call each of them Comrade Investigator.

From the airport Vasily was whisked in one of a fleet of heavy Zis cars through the streets of Moscow. They stopped briefly at a gate in a huge wall and then sped on. Vasily recognized the place from photographs. The Kremlin itself! He wished Piotr had been brought, too, to share his misery.

THE PROCESSION of cars stopped in front of a dark old building and Vasily was led inside, through a richly-carpeted hall to a high-ceilinged sitting room. Three of the grim men from the plane sat with him in silence while the rest went off somewhere else.

There was a huge painting of the great Stalin over the fireplace and Vasily studied it for what comfort it might provide. Sometimes he thought the once-again-revered father of the people was smiling at him; but at other times he feared that the look was stern and displeased. Whatever the expression, the eyes never wavered. They bored steadily into the depths of Vasily's very soul.

After many minutes of waiting Vasily was led back through the hall and up a flight of stairs to another room. Inside it, two men were sitting at a big round table. A third chair at the table was empty. One of the men smiled pleasantly and Vasily sat down, tentatively, ready to spring to his feet and stand at attention if this seemed indicated.

But the men were extremely courteous. "I am Y. S. Kruglov," said one of them, "and this is Comrade Belyavsky."

"I am honored to meet you," said Vasily. He read few papers, aside from technical journals, and had no idea who the men were.

"And we are honored to meet you," said Kruglov, "Comrade Commissar Budayev."

VASILY'S ONLY outward reaction was a rapid blinking of the eyes, but inside him was turmoil.

"We have subjected your

process to the most complete tests," Belyavsky said, speaking for the first time. "We have found it to be a most significant contribution to Soviet science and culture. It is fitting that the discoverer of the process should be rewarded."

"I . . . I . . ." said Vasily.

"Yes, Comrade Commissar?"

"*Commissar?*" Vasily finally exploded. "Me?"

Belyavsky smiled. "Yes. You are appointed, as of this date, Commissar of Weights and Measures for the Union of Soviet Socialist Republics. I had hoped," he said, "that we might discuss the duties of your new office at this time, but perhaps it would be better if we leave that over until tomorrow. You have had a long journey and if you wish, I will have you shown to your room."

"Yes," said Vasily. "A long journey indeed. Yes, Comrade, if you will."

One of the first duties of Comrade Commissar Vasily Budayev was to call in all the measuring tapes which were used in athletic competitions. In their places were issued new tapes, made of Vasily's shrinking cloth.

Vasily had agreed to this reluctantly. But they had put it to him psychologically. "If the athletes think they are that good," his advisers had said, "they will most certainly *be* that good."

VERY SOON the Soviet news agency, Tass, and Radio Moscow were able to announce that Soviet athletes had set new world's records in a series of track and field events. They included the high jump, the broad jump, the pole vault, the 16-pound shot and the 56-pound weight. These had been measured with Vasily's new 20-meter tapes.

After the 100-meter tapes had been distributed, the athletes succeeded in setting new marks for the 16-pound hammer, the discus and the javelin throw.

But even with these successes to his credit, Vasily Budayev did not adjust quickly to his life as a Soviet bureaucrat. He found it difficult to forget that he had been a scientist, and that the big part of a scientist's job was finding answers to questions. And some of the questions he wanted answers to were embarrassing, even to the Marxist-Leninist dialecticians who were his advisers.

They were not accustomed to dealing with naivete — at least not at such a high level of the government — and they had to talk long, hard and often to keep the new Comrade Commissar of Weights and Measures persuaded that there was nothing unethical about using the Budayev tapes to prove to others the obvious superiority of Soviet athletes.

Vasily's family was brought to Moscow and soon they were all together in a fine new apartment. Where they had once lived three in a room and shared a kitchen, they now had six rooms, a toilet *inside* the apartment, and a servant. Vasily disapproved of the servant at first, and so did Masha, but they gradually became accustomed to the idea.

Two others also were brought to Moscow. They were Piotr Serov, Vasily's former section chief, and the district commissar. From his new pinnacle Vasily recalled with an inward smile that he had once thought of them as the Section Chief and the District Commissar, in upper case.

THE TWO had been brought in at the insistence of the Security Police (upper case, always) after it had been established beyond doubt that no others knew the secret of the shrinking tapes. No others living, for sure.

Vasily had a black moment when the Chief of the Security Police himself paid him a call. But it was a friendly visit, during which the Chief gave him a cigar, told him a funny story, slapped him on the back and finally got to the point. What was to be done about the section chief and the district commissar? Places could be made for

them in the Commissariat of Weights and Measures if the Comrade Commissar wished. But if he wished otherwise, for any reason, the Chief would be pleased to dispose of the matter without troubling the Comrade Commissar further. He need not worry.

The slight emphasis he put on the words *dispose of* made Vasily shudder, so he said quickly that he would like the section chief for his assistant. As for the district commissar — well, perhaps a desk in the outer office. It was agreed.

Piotr Serov was ushered in soon afterward, looking shabby and worried. "Good morning, Comrade Commissar, your excellency," he said respectfully, scraping one foot nervously over the thick carpet.

Vasily got up to greet him. "Piotr, my little one! Come and sit down. It's good to see you again."

"Thank you, Comrade Commissar."

"Henceforth you are my assistant, Piotr," Vasily said. "And call me Vasya." He added: "— when we are alone."

"Yes, Vasya," Piotr said, grinning. "Like old times, eh, the two of us together?" He looked around the private office with approval. "Very plush, Comrade. I think I will like it here."

VASILY TOLD him what had been happening since he'd left the village. Piotr had heard about the new athletic records, but had not connected them with the Budayev tapes. He murmured in surprise, then laughed.

"This is serious," Vasily said in rebuke. "The tapes have other uses, too, and it is up to us to discover them. Their usefulness in athletics is extremely limited; already we have gone as far there as we can go."

"But why?" asked Piotr. "There are running races, and —"

"Think a moment, Petya," Vasily interrupted, "and you will see that it is not so. In the broad jump and the javelin throw and so on, the measurement is of *distance*. In a running race, or a speed contest of any sort, the measurement is against *time*."

"Ah, of course!" said Piotr. "Then the answer is obvious. We must develop a new clock. A *slow* clock!"

"No," said Vasily. "That would not do. If the clocks for sports were slow, all clocks would have to be slow."

"Then let all clocks be slow. Think what it would mean. The trains would run faster. The working day would be longer. That would mean greater production. The —"

"No, no, Piotr. I have

thought of all this. This would lead eventually to such things as the sun setting at noon. It could not be explained. No, we must not tamper with time. Our research must be in the field of measurement, exclusively. And in that limited field alone we have much to do."

"Then all measurements must be — adjusted, shall we say? Is that it? Everything will be larger or longer or taller, eh?"

"Everything, I'm afraid," said Vasily, "from the height of our people and buildings to the length of our borders."

"Ha-ha!" exclaimed Piotr. "We shall yet make even Stalin a tall man!"

"Piotr!"

"I meant it well," said Piotr. He shrugged.

MUCH HAD to be done. The Commissariat had to go to the very foundations of measurement. Every instrument of distance, from micrometer to schoolboy's ruler to surveyor's transit had to be studied to see how it could be made to conform to the Budayev principle. And the Budayev process itself had to be modified — or at times even completely reversed — before it could be applied properly.

Vasily's original plan, of having everything accurate in relation to everything else, at least, had to be scrapped. It was about

that time that his scientific sense of concinnity finally surrendered completely to his bureaucratic zeal. A motto which once had inspired him, *"Everything is what it is and not another thing,"* became a lie.

At last the preparatory work was done. The Security Police, who had maintained the secrecy of the Budayev project all along, now selected the factories and machine shops in which the new measuring instruments would be made. Their screening of the workers was very thorough, because the Security Police were making up for a bad slip. Somehow they had neglected to keep the world's champion broad jumper, one F. I. Botchick, from being sent by his local sports committee to an athletic meeting in Hungary. Botchick was badly beaten by the Hungarian champion and, worse, the Hungarian's 7.86 meters was far short of the world's record Botchick had set with the aid of the Budayev tape.

THE WORD was spread later that the valiant Botchick had been suffering at the time from severe stomach pains and was operated on the next day for appendicitis; but the excuse went out late, and incalculable damage was done to Soviet prestige in the satellite country.

So the Security Police were

spurred into one of their finest jobs and soon the Budayev instruments works were going full blast behind the strictest curtain of secrecy man could devise.

The exchanging of old measuring tools for the Budayev models followed and, by carefully planning and herculean effort, the Security Police accomplished this in twenty-four hours — from Minsk and points west to Vladivostok and from the Arctic to the Black Sea.

The Budayev principle, modified for sports, had called for a fifty-foot measure to be an inch shorter each year. This was enough to maintain Soviet athletic superiority. But such a scale obviously was inadequate where inches or a few feet meant almost nothing.

Therefore a further modification of the principle had to be applied when it came to revaluating the height of Lenin Peak. Once this peak in Soviet Asia had been an also-ran among the giants of the world, at a mere 23,382 feet. But application of the Budayev principle, adjusted for vertical topography, sent Lenin Peak soaring to 28,500 feet, leaving it second only to Mount Everest.

MORE THAN just mortal respect for Everest was at work here. Everest was in Tibet, in which Communist China took an acute interest, and the For-

eign Minister himself strongly urged Vasily to avoid any loss of face for the Chinese.

The Budayev principle, in another form, stretched the length of the railroad lines and the Ministry of Transportation gratefully increased passenger fares.

The Ob River, wending its desolate way east of the Urals to the Gulf of Ob at the Arctic Circle, was found to have outflowed the Nile by several hundred miles and became the world's longest.

Budayev's spiritual thumb leaned on a scale at a livestock exposition in Kiev and a grand champion steer was shown to weigh 1,480 pounds, a world's record for beef on the hoof. A girl on the translation desk at Radio Moscow who knew idiomatic English warned that this statistic, when broadcast to America, would be cheerfully counterpropagandized as a lot of bull, but she was ignored.

Night and day Radio Moscow thundered these new proofs of Soviet supremacy. Day and night Tass fed the world a diet of figures about the longest, the biggest, the highest. And each issue of *Pravda* had at least one proud report on the newest measurements for home consumption.

Vasily Budayev was awarded the gold star on a red ribbon that made him a Hero of the Soviet Union.

TIME, to which the Budayev principle did not apply, went on. As the years rolled by, it became perfectly natural for things to measure so much one year and so much more than that the next. It became a way of life untouched by the early jibes of the western world about the desanforized Russians.

The West had long since both fathomed the secret of Soviet neo-giantism and given up trying to dehypnotize the Russian people.

The people accepted the minor discomforts of the Budayev way without complaining. Obviously, if they were taller than they once had thought, and if their children were taller still, the doorways of new buildings would seem lower and the rooms of new houses would seem smaller. It became a matter of pride to stoop as one went through a door.

Production boomed as the size of manufactured articles shrank and so many more of them could be turned out. Quotas were raised, too, of course — but they always had been, regularly, anyway.

Airplane pilots whose cockpits seemed tinier did not complain; instead they dieted.

Even the farmers, whose crops had come to measure so much more at harvest time, did not complain when the government buyers paid for them at a

lower rate. An exhaustive indoctrination in Budayevic economic theory left the farmers baffled but agreeable — especially since so many of them had been honored with the high title of Hero of Socialist Agriculture.

Vasily grew fat and lazy, leaving more and more of his administrative affairs to Piotr Serov, whose motto, a Budayevic modification of Vasily's old one, was "*Everything is what it ought to be.*"

Vasily's children grew up, measuring taller than any Budayevs ever had before, and took important jobs in the Commissariat.

WHEN VASILY BUDAYEV died at the age of 59 he was mourned throughout the land. The Politburo marched in a body in his cortege and then he was laid to rest in a specially-constructed tomb near Lenin's and Stalin's in Red Square. The tomb was scarcely bigger than the coffin itself, a fitting testimonial to the increasing diligence with which the Budayev principle was now being applied. An old peasant woman, who had journeyed to Moscow to pay him homage, stood before the tiny tomb and marveled that he had been such a big man.

Piotr Serov, aged and, it was whispered, senile — but still spry and dedicated — succeeded his old friend in the Commis-

sariat of Weights and Measures. His name headed the long list of those who signed Vasily's obituary when it was published in *Pravda*. And in his eulogy, Piotr expressed hope that a memorial of some kind might be created; one which would perpetuate the name of Vasily Budayev in stone or steel as it lived on in the loyal hearts of his friends.

From a little girl in Alma-Ata, in the booming Kazakh, came the winning suggestion. A great merchant ship would be built, a vessel to dwarf those of the decadent capitalist countries, and would be named the *Vasily Budayev*.

And so it was built, at Odessa, and each of the Soviet Socialist Republics contributed to the construction. The Russian S.S.R. supplied the blueprints, drawn up personally by Piotr Serov and based on the latest refinement of the Budayev principle. The Ukrainian S.S.R. supplied the labor; Tadzhik the machinery; Azerbaijan the fuel, and the Karelo-Finnish S.S.R. the fine woods for her decks.

LABORING MIGHTILY, Stakhanovite workmen completed the ship in ten months and she was launched with appropriate ceremonies on the first anniversary of Vasily's death.

She was a beauty, every gleaming inch of her 1,500 feet from

stem to rudder post. Half again as long as any other ship she was, truly the mistress of the seas.

It was decided that she would sail, unheralded to the outside world, through the Dardanelles and the Mediterranean and into the Atlantic. Not until she was well across the ocean on her way to New York would she break radio silence. How the eyes of the capitalists would pop when they saw her!

The greatest seafarer of all the Soviets, Captain Y. G. Chernov, was chosen as master of the *Vasily Budayev*. After he had sailed her for a fortnight's shakedown cruise on the Black Sea, Captain Chernov pronounced her perfect.

The passenger list was chosen with care. Each guest was to contribute to the historical record of the pioneer voyage. Great journalists from *Pravda* were among them, professors of history from the great Russian universities, newsreel and still cameramen, People's Artists from the Bolshoi Theater to reenact the momentous scenes of the arrival — and, of course, Security Police to safeguard the many interests of the State.

AT LAST, the day of departure came and the *Vasily Budayev* weighed anchor and began the journey. The ship sailed anonymously through the Med-

iterranean, false lettering on her bows and stern masking her identity, and then out into the Atlantic.

It was winter now, but who feared the elements aboard such a staunch ship? Captain Chernov pointed for New York.

Two-thirds of the way across the ocean a great storm broke. The wind howled with hurricane force. The waves were mountainous. The *Budayev* groaned amidships as she was lifted high by them, then hissed as she slid down into the trough, only to be lifted, protesting, again. Once the propellers were lifted clear of the water and the crew feared that the spinning of the screws would tear the precious engines apart.

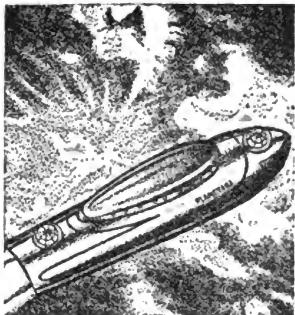
But after two days the storm subsided, then passed. The skies again were clear and the sea calm. The *Vasily Budayev*, battered but unbroken, sailed on.

The captain now ordered radio silence ended. He sent a message back to the Kremlin, then dispatched a statement to the Port of New York, to prepare it for the arrival of the pride of Odessa and of her Motherland.

Off Sandy Hook Captain Chernov glanced once more in the mirror, adjusted a medal on his spotless uniform, threw back his shoulders and left his cabin for the bridge.

Chernov was a proud man, and a proud time was ahead.

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CAPTAIN CHERNOV was also an impassive man. He stood on the bridge of the *Vasily Budayev*, sucking at his pipe as the ship steamed up the lower bay toward the Narrows. He spat carefully into a sand bucket as the sea giant approached off his port bow on her outward passage. He read the name on her side. He had to raise his eyes to do so. *Queen Elizabeth*. He knew her length — a mere 987.4 feet. His eyes widened a little, but that was all.

The *Queen* greeted the *Budayev* with a derisive blast of her whistle as she passed majestically by. The *Budayev*, rocking in the swells of the Britisher, whistled back, weakly.

Captain Chernov knocked out the dottle and loaded his pipe again with precise movements of his fingers. He lit it, using only one match, and pulled at the smoke with methodical puffs.

"Comrade Captain!" It was the first mate, open-mouthed and saucer-eyed. Chernov silenced him with a gentle gesture.

The first of the welcoming vessels were coming. The city fireboats, spraying water to the sky, the private yachts, the tiny pleasure craft, the tugs and fish-

ing boats. As the distance between them and the *Budayev* lessened, the streams of water from the fireboats faltered, then ceased. The cacophony of whistles, bells and sirens stilled. Across the water, carried to Captain Chernov's ears by the wind, came bursts of laughter.

The press launch pulled alongside the *Budayev* and the reporters climbed aboard. They didn't have to climb far. They were grinning broadly, all of them, except the man from *Tass*.

Captain Chernov, his face like a rock, met them on the deck.

"Well, Captain," a reporter said, looking around maliciously, "so this is the 1,500-foot *Vasily Budayev*, eh, the pride of the Soviet merchant fleet?"

The captain pulled at his pipe and let the smoke drift out of his mouth. He smiled ever so slightly, then, and made the statement that retrieved the all-but-lost glory of the Soviets and which was to be echoed for a generation in every Russian home.

Captain Chernov said: "Gentlemen, you are mistaken. This is not the *Vasily Budayev*. The *Budayev* went down in the great storm at sea. This is one of her lifeboats."



What would you call a man who plays a joke on a psychotic, after he's been warned about the situation?

IMPRACTICAL JOKE

NOVELET

by L. Sprague de Camp

Illustrated by Emsh

ALL RIGHT, honey, so I'm a beast and a bounder. But I'm not going back to Jack's party and I won't apologize. I'm going to take you home and go home too.

Sure, I know it was only a joke. But, darling, if we're going to get married, you've got to learn that I won't take practical jokes. Big ones or little ones; now or any time in the future.

Call me a stuffed shirt or say I have no sense of humor; it won't change me. And if you've got any ideas of reforming me after we're married, you'd better drop them.

Why? Oh, I never did like

them much, and after what happened on Suomi . . .

Haven't I told you, ever?

. . . Well, this was my first expedition. I'd just graduated with a major in journalism. This was just after the Raskolnikov drive made it possible for private persons to send out interstellar expeditions and also get them back in the same generation. I'd studied biology under Otis May and got a letter from him asking me to drop in.

You don't know him, do you? He's short and bald, and fifteen years ago he was very strong and muscular. He's full of energy and bustle; pleasant enough, but straightlaced. That was one of



the troubles. His idea of an evening's fun is to go to the Y. M. C. A. for a workout on the parallel bars.

With him were two others. One was a tall pale round-shouldered fellow with a profile like that of a polar-bear: a big pointed nose sticking out forward, and no chin or forehead to speak of; sandy hair and bulging blue eyes. I got the impression of a frail man. May said: "Mr. Fish, this is Roy Laskaris. Used to be a student of mine. Roy, Mr. Winthrop Fish."

THE NOSE stuck out a big knobby hand and grabbed mine in a grip that practically

disjointed it. He leaned forward and shouted, spraying me with saliva: "Glad to know you, Roy! You just come along with us, we'll show the gaw damn world how to explore! Laskaris is Greek, ain't it?"

"Uh — yes," I said.

"Swell! Great minds, great heroes, great businessmen, all Greeks! A Greek can lick three Armenians and five Jews on a trade! Heh-heh-heh! We'll show 'em, Roy old boy, old boy!"

He gave a loud braying laugh and broke the remaining bones in my hand with a final squeeze. May had spoken as if I ought to have known who he was. One thing, he was not so frail as he

looked; quite the contrary. His speech was upper-class New York City with a pseudo-British pronunciation grafted on it, but he didn't care anything about grammar. It gave a queer effect. I didn't much like his starting right off with a crack about the sharpness of my ancestors. After all, they'd been in this country four generations, so I was no more "Greek" than Theodore Roosevelt was Dutch.

"And this is Dr. Edward Sander," May went on. He referred to the third man: a short middle-aged fellow with a square face, a gray mustache, and longish gray hair. Dr. Sander shook hands in a quiet mousey way and murmured something conventional.

We sat down with the others looking at me. May said: "Roy, I asked you here to offer a job on an interstellar expedition that Mr. Fish is financing."

SO THAT explained that. I was awfully surprised. Here was I, a kid just out of college without even a job, though I was dickering with the *Record* for one. I said: "That's wonderful, Professor May, but what sort of job? I don't know what I could do on such an expedition. I'm no scientist."

"Secretary," said May. "Keep records, journals, and so on. Write the official newspaper stories for release on return. Any-

thing else that comes up. Expedition like this, everybody has to double in brass with a dozen jobs. Ship's too small to hold all the specialists we really could use."

"How did you happen to pick me?" I asked. I didn't want to protest my unworthiness too hard, but I didn't want to get in on false pretences and disappoint them. I was also curious, being kind of puny, not much of a mixer, and no outdoorsman at that time. You'd never have looked at me twice, dear.

"Had my eye on you," said May. "Need people with no close relatives, for one thing. Time-lag, you know. Mustn't mind going away for years. Also we need them young, so they're adaptable and their broken bones heal fast."

"Where's it to?" I asked.

"Keid A Two, or Omicron Two Eridani A Two," he said. "Sixteen light-years. With the Raskolnikov drive, takes a year and a half, objective time, to get there, though it'll seem like nothing at all to you. One previous expedition there, Jap. Only preliminary recon; superficial. We hope to make a thorough ecological study."

"What are the — ah — terms?" I said. I knew leaders of expeditions are always trying to save money by getting people to work for them free. I didn't know if I wanted to pop off for

years for nothing but board and maintenance.

MAY LOOKED at Fish, who seemed to have gone into a trance. Fish woke up and said: "Huh? Whazzat?"

"He wants to know about salary," said May.

"Oh, Don't worry, old boy, old boy," shouted Fish. "I'll pay you. Same as an instructor gets here at the University. I don't believe in hiring people for nothing on these parties. If you don't pay 'em, you haven't got any hold on 'em. They're liable to walk out over some gaw damn silly little argument. Well, whaddaya say, old fruit? Are you with us?"

"Well — may I have time to think it over?" I said.

May began: "Don't see why not —" but Fish interrupted.

"Naw, you can't," he said, pronouncing "can't" with an "ah." "Make up your mind now, old crumb. An explorer's gotta be a man of decision, what? So that's one way of screening out the right kind of people, huh? What'll it be, Roy old boy?" And then came that asinine laugh.

"Okay," I said. "I'll come."

Fish jumped up and came around. I thought he meant to attack me, but all he did was wring my poor limp hand again and pound my back. "That's the kind of guy I like," he said. "Makes up his mind. Like that

other Greek hero, Ulysses? Yah, I think I'll call you Ulysses, huh? Heh-heh-heh."

I MUST have been awfully stupid, because it never occurred to me that Winthrop Fish was going on this expedition. When I thought about it later, I saw he'd implied it clearly enough. For one thing he was in his thirties, which then seemed practically senile to me. For another, I assumed that millionaires who financed expeditions stayed at home, since they'd be of little use on other planets and would only take up space better given to scientists. If somebody offered me a place on an expedition now with a man like Fish I'd say no, because I know how one eccentric in the crew can foul things up.

When May called a meeting of all the members of the expedition for briefing, there were Fish and his friend Sander. The first people May introduced to the rest by their official titles were Fish as "hunter" and Sander as physician. He, May, was the leader. There were five other scientists besides May: three other biologists, a geologist, and a meteorologist. Then there were the pilot, the co-pilot, and four engineers.

The pilot was Harry Constant, a big square-jawed heavy-set fellow with curly hair and a jolly grin. He spoke up: "Say, Profes-

sor, is this all the people on this expedish?"

"Yes," said May.

"No dames?" said Constant.

May said: "No. I explained that I chose only single men —"

Constant interrupted: "Yeah, sure, but couldn't you have picked a lady scientist? After six months on Suomi even one of those would look good."

The co-pilot, a little guy named Philip O'Sullivan, laughed at this, but May looked annoyed and said: "Mr. Constant, I know something about organizing expeditions. Mixing sexes, just a way of asking for trouble. We shall have enough difficulties without bringing on those caused by human weakness."

"You're gaw damn right," spouted Winthrop Fish. "Women are verily a by-word and a hissing, as the good book saith. Never trust a woman."

AT OUR last meal before we got to Suomi — that is, Keid A II — May briefed us on the planet, though we knew a lot of it already. He said: "The first two weeks will be the hardest, setting things up. Work round the clock, cutting trees, clearing a site, unloading the ship, adjusting apparatus. Everybody pitches in. Once we're set up, we shall be pretty safe in spite of mud and bugs. Even climate, no storms or earth-

quakes, all animals pretty slow even if some are venomous. One real danger — if the Japs were right — naupredas."

"What's that, Professor?" said Constant.

"*Naupreda yamamotonis*. One of the Gegamyzidae. Looks like an overgrown lamprey, up to twenty feet long. Not dangerous individually, but social. Forms great spherical colonies in swamps, thousands of naupredas all tangled up together in their own slime."

"You mean it's like a snake?" said Winthrop Fish.

"Rather. Rudimentary limbs, snakelike locomotion. Why?"

"Oh, my God! I'm deathly afraid of snakes," said Fish.

"Funny time to find that out," said May. "On your way to a planet where most of the larger animals are apodal, or at least serpentiform."

"I suppose so. Other wild animals I don't give a gaw damn for. I'll walk right up to a lion and spit in his eye. But snakes — ugh!"

"You can stay in your tent when they're around," said May. "To go on: Naupredas form these colonies, breed, break out of the membrane around the colony, start out in a column. Great writhing mass; swim, crawl, eat everything in path. Nothing to do but run, hoping they won't corner you. No good shooting; too many. Got a flame-

thrower and a box of phosphorus-grenades. If you kill enough at the head of the column, the rest will turn. Instincts: live naupredas exude a smell that attracts others of their kind; dead ones a smell they avoid. Complex behavior-pattern developed out of a few simple chemical stimuli, as with army-ants. Sometimes the column accidentally joins itself to form a closed figure, and the naupredas march around the course until they die of exhaustion . . ."

SUOMI ISN'T the official name of Keid A II. There was a Finn on this Japanese expedition who thought the planet ought to be called that, not because it's the Finnish name for Finland, but because a name meaning "marshland" seemed appropriate. A swamplier planet I've never heard of. It hasn't much surface-water, but a very low relief, with neither high mountains nor deep oceanic basins. So what water there is is scattered over its surface in millions of ponds, lakes, and swamps, with a lot of little seas for them to drain into.

The dry surfaces — if you can call any place on Suomi dry — were covered with a thick growth that looked like the plants that grew on earth back in the coal age: like mosses and horsetails and ferns grown to tree size. Most of these plants are too

soft and pulpy to be of any use to an expedition, and most are poisonous for a man to eat. It's an awfully monotonous flora; no flowers or broadleafed plants.

The animals are something like earthly amphibia, mostly eel-shaped, though they come in all shapes and sizes, with and without legs. Imagine a world swarming with frogs, tailed frogs, newts, congo eels, hell-benders, and things like that, in all sizes from a pinhead up to fifty feet long. Many have venomous bites. There are only a few small high spots you could really call dry on the whole planet, and those are polar. So no higher form of life has evolved a life-cycle with breeding out of water, since there's no large area for such a species to expand into.

WE SET up camp on the highest land we could find in our area. Behind us was a swamp so full of big rushlike plants, a hundred feet high, that it was almost impossible to enter it. In front was a little isthmus between two lakes, with more swamp and ponds beyond it. Beyond these lay the Beebe River.

The temperature's comfortable enough in the equatorial regions, where we were, but you have to adjust to a day of seventeen hours instead of twenty-four. The oxygen is high enough to breathe — sixteen per cent — but the carbon dioxide is too

high at five and a half. You can stand it for a while, though it makes you pant, but several hours of it will poison you with acute acidosis. So outside your tent you have to wear a respiration-hood, a thing of thin transparent plastic with a chemical intake-filter to absorb excess CO₂. It's not so bad as a regular oxygen mask, which pinches the bridge of your nose, but it's bother enough. You also spend your life in high rubber boots because of the everlasting mud.

So picture our little camp with its air-tight tents, its chemical stove (since the native plants won't burn in that damp low-oxygen atmosphere) and the area where the scientists sorted and cleaned their specimens — the whole place swimming in slimy mud. Beyond in all directions, a monotonous dark-green wall of vegetation, things like giant rushes and asparagus-spears without any real leaves. And noise! Day and night, the animals kept up an awful racket of croaking, grunting, cheeping, bellowing, and burping. Mating calls, I suppose. If you looked carefully you could sometimes see one of the grunTERS, usually nothing but a dark shiny blob in the water.

The arthropods are like our insects, except that most are big two-winged things with only four legs. They look a little like flying spiders, and they get into

everything. Some of them bite, too. They probably die of indigestion afterwards, but that doesn't help the defunct Earthman.

Then overhead is this hazy atmosphere that makes Keid look like an orange blob when you can see it. Mostly it's overcast, with a wind that blows from the northeast day and night, fifteen to twenty miles an hour. Once in a while a cloud drops a shower, but there are no really violent storms.

I SOON learned that the expedition's secretary and youngest member — that is to say Roy Laskaris — was also the errand-boy and handyman. We worked like fiends, sloshing around with a couple of pounds of mud on our boots; scrape it off, and it was back in a few minutes. A couple of the biggest animals, the size of a crocodile, wandered into the camp and had to be shot to keep them from eating us with those triangular mouths that are standard on Suomian vertebrates. After that a little electrified fence, a foot high, kept out all vertebrates big enough to be dangerous.

Winthrop Fish pitched in and worked like a beaver at the chores of the camp. In fact he did more than I. Despite his pale, unhealthy look he was strong as a bull, while I was kind of skinny and under-muscled —

though I got pretty well hardened by the time I'd been on three expeditions.

The work tapered off after the twelfth day when we got the automatic apparatus set up. After that I was kept busy by the scientists, who dumped mountains of records on me for typing and filing: sheets of illegible notes, index cards, slides, labels, and reports.

THERE WAS still a lot of dirty work: cooking, cleaning up, burying specimens that had decayed beyond use, and so on. May tried to make the pilots and engineers responsible for this, but they all proved lazy or fumble-fingered. In the end Fish and I did most of this work. Fish tried hard to conquer his ophidophobia and got so he could pick up a dead legless amphibian and bury it, though at first it made him pale and trembly to do so. Sander gave a hand to the bacteriologist.

The pilots and engineers, all six, drew apart from the rest of the expedition. Constant was the natural leader of that group, being the biggest and most aggressive. Their loafing didn't make for good feelings. One evening at dinner in the main tent, May as usual asked for everybody's opinion. Winthrop Fish burst out: "Look here, Professor, me and Roy have been doing all the gaw damn chores while the crew

sit on their fat duffs playing penny-ante and making cracks at us. I don't mind hard work, but things ought to be shared more — more fairly, huh? I know you're the boss, but if I'm furnishing the dough I oughtn't to do *all* the dirty work." He was waving his arms and spraying by the time he finished.

The crew all started talking at once, each bragging about some chore he'd done a couple of days before. Harry Constant yawned and scratched his scalp and said: "Sure, we've been working. He just don't know what's going on. He walks around muttering to himself —"

Then little Doc Sander, who was usually so quiet you never noticed him, broke in. He said: "That's enough, Harry!"

"Why?" said Constant, looking innocent.

"Well — uh," said Sander.

"We'll settle this now," said May. "No gambling — or any game-playing — during working hours."

The crew groaned. Constant said: "Aw, hell! This is the biggest bore I've been on. No dames, no liquor, can't smoke because of using up the atmosphere-filters, and now we can't even play cards. My God! What a bluenose you turned out to be!" He got up and pulled his hood over his head. "Let's go out and listen to the froggies croak, guys. Nothing else to do."

THEN THIS trouble simmered down for a while. The crew did work harder, so Winthrop Fish and I got ahead of our work and found ourselves with nothing to do until the scientists piled up some more specimens. Fish said to me at breakfast: "Roy, old boy, let's go out for a little hunt today, whaddaya say, whaddaya say? I haven't fired a gaw damn shot since we been here. Let's take a shotgun for specimens and a rifle in case we run into those naupredas. Whaddaya say, huh?" He pounded me on the back.

"You two be careful. Liable to get lost," said May. "Here's a sketch-map, and don't get out of sight of the flag. Not for a moment."

We'd put up a telescoping aluminum flagpole with a big American flag on top, not just for patriotism but to give a landmark. In that flat landscape you could see it from quite a distance if you found a tree you could climb without its collapsing under you and dropping you into a bog.

Fish said: "Say, Professor, how about giving us a couple of those phosphorus bombs in case we meet naupredas? Whaddaya say, huh?"

"No," said May. "You can run away from them if you do meet them. Saving the grenades in case a column heads toward camp."

SO FISH and I took our guns and started out with our plastic hoods over our heads and big collecting-bags on our backs. I soon knew why we didn't have to worry about getting out of sight of the flag. In the first place, when you sink up to your calves in mud you don't walk very fast. In the second, the ground was so cut up with ponds that you had to walk three times the straight-line distance to get anywhere. And the fact that the gravity is about three per cent less than ours doesn't help much.

We followed the isthmus in front of the camp and went on to a big swamp beyond it. This swamp was part of the Beebe River, into which the lakes drained. But the Beebe is so sluggish and spreads out into so many arms and bays and swamps that you can't tell which way it's flowing without a map.

Finally, that short day fools you, even after you should have gotten used to it. We had to hurry home with our bags only half full, so as not to be nighted in the swamps.

Aside from collecting some small specimens with the shotgun, there wasn't anything special about that little hunt. But I got a good look into Winthrop Fish's character. He talked a lot, but since we both wore hoods he couldn't spray me with spit. I learned that, though he never

finished secondary school, he was well-read — especially in the literature of the outdoors, hunting, and several branches of natural history.

THE TROUBLE was he couldn't do anything with all the many facts he'd picked up. Instead of reasons or principles, his mind was stuffed with childish prejudices, clichés, and cant phrases. You know the sort of thing: All women are predatory and treacherous; all Greeks (meaning me) are sharp bargainers; all Negroes are good-natured dopes; all politicians are crooks; and so on. He really believed all these things, and it did no good to argue. For instance, every time we saw an animal that might be a carnivore he'd shoot it, whether we already had specimens or not. He called it ridding the country of predators to protect the game.

"I've always shot every gaw damn lousy predator and I'll always shoot every gaw damn lousy predator!" he shouted, waving his arms. "Crows, hawks, wildcats, everything like that. I kill 'em all!"

I'd picked up a smattering of ecology from the scientists and tried to argue about the place of carnivores in a well-balanced fauna. Fish only yelled louder: "I'll kill 'em all! They're cruel and destructive! The trouble with you, Roy, old boy, old boy,

is you're too soft-hearted for this kind of work."

He punched me in a joshing way, nearly breaking my arm, and went on: "You've never been in God's great outdoors like I have! Hunting and fishing, that's the sport for a real man! The strenuous life! Lemme tell you about the time . . ."

After he'd rambled on about some pointless hunting-anecdote he said: "And you ought to see some of my trophies at home! I've got a house, you know, in Westchester County. Big barn of a place I rattle around in, all alone except for the cook and the butler and the gardener and the maid. Ever since my wife ran off with the kid . . ."

HE STOPPED talking to push a handkerchief up under the edge of his hood and wipe away the tears. "Never trust a woman, old crumb!" he said. "They're all fickle and treacherous, like the Good Book says! I did once, and look what happened to me. If my lawyer hadn't dug up evidence, why, she'd have skinned me to the bone, old fruit; absolutely to the bone.

"But looky here, after we get back to Earth, you gotta come see me. I ain't got many real friends, you know, in spite of the twenty-room house. I'll show you my heads, and that record salmon — well, anyway — what was I talking about? Oh,

yeah, I got a swimming-pool too. If you haven't got a car of your own you can use one of mine. Whaddaya say, huh? Say you'll come see me, Roy! I'm alone — alone so gaw damn much!"

He was kneading my arm with those steel fingers, and I saw he was really pleading. I said: "Sure, Winthrop, I'll be glad to come."

He slapped me on the back and nearly knocked me on my face in the mud. "I knew you would!" he yelled. "We'll have a real swell time, huh? Now let's knock off some of these gaw damn predators!"

I GOT THE impression of a man whose personality had stopped growing at nine or ten, but who was still basically a kindly, well-meaning, lonely fellow for all his oddities. I asked: "Winthrop, why did Doc Sander shush Harry Constant when he remarked about your habit of talking to yourself the other day?"

He giggled and looked at me with a funny expression, like a small child trying to be crafty. "Well, uh," he said, "I ain't supposed to talk about that. But since you're gonna be one of my few real friends, Roy, old boy, I'll say in confidence I've been pretty sick in recent years. Yah, quite sick. And good old Doc doesn't want my nerves upset,

on account it's liable to bring on a relapse. Beastly annoying, what?"

Well, darling, in all my three expeditions I never felt purer horror than I did then. Here was I, in the middle of millions of square miles of mud and swamp, shut in by these monotonous dark-green tree-mosses nodding their heads in that monotonous northeast wind, listening to the monotonous grunting and chirping of a million slimy amphibians. Now in addition I found I was alone with a man who'd been "sick" — only I suspected what kind of sickness it was. If the naupredas didn't swarm over us in a slimy mass and devour us, Winthrop Fish would do something awful to wreck the expedition. And what could one do to the expedition's financial backer?

At the same time I couldn't help liking the fellow. I'd always taken a dim view of loonies, believing they'd be better off dead or at least sterilized so they couldn't pass on their defects. But Winthrop Fish was like a child or a dog that's always doing something wrong, and then coming and slobbering over you and wondering why you're angry.

I tried to pump him further about his illness, but he clammed up on that subject and talked about hunting and fishing until we got back.

WE GAVE the scientists our specimens and headed for our tents to lie down for a few minutes before dinner. I'd just gotten my second boot off when I heard the most god-awful shriek. I looked out to see Winthrop Fish bounding out of his tent, not stopping to fasten the flap to keep the air inside conditioned, or even to pull his hood over his head. He was yelling his fool head off: "It's got me! It's after me! Help! Get a gun!"

Everybody jumped up. Fish ran the length of the camp, tripped over a tent-peg and fell, got up covered with mud, and ran off in another direction. This time he tripped over the electrified fence, broke one of the wires, and got a shock. He got up screeching like a banshee and started off on another run. He was hollering and giggling and crying all at once. This time he made for the equipment-tent.

Doc Sander called: "Stop him, somebody!"

I took a couple of steps and sank into the mud in my socks. While I hesitated, Fish popped into the equipment-tent, came out with the rifle we'd been carrying, and blazed away at his and Sander's tent.

He got two shots off, right in the middle of that crowded little camp, when Maier the zoölogist brought him down with a football tackle and Radek the geologist twisted the gun out of his

hands. It took four men to hold him down, and it was just luck he hadn't killed anybody.

All this time, instead of helping, Harry Constant and Phil O'Sullivan were staggering around, laughing like crazy men and slapping each other on the back. O'Sullivan was a nice little man, but he worshipped Constant and did anything he suggested.

SANDER CAME running with his hypodermic and pushed through the crowd around Fish. Presently Jake Radek ran to the Fish-Sander tent, went in, and came out dragging a dead ten-foot *ptyssus*. That's *Ptyssus kniridae*, an eel-like creature that climbs trees and drops on passers-by like an anaconda. Fish had found the thing coiled up on his cot in a lifelike attitude, with its three jaws propped open to show the fangs. In the dim light in his tent he almost sat on it before he noticed it, and his horror of snakes did the rest.

We had to patch the bullet-holes before the tent was usable. Winthrop Fish went in to lie down. When Sander came out he said: "He'll sleep till tomorrow. I want to talk to all of you at dinner."

When I served dinner (it being my turn) Sander looked around the tent and said: "I take it you had something to do with this, Harry?"

"No, sir, not a thing," said Constant with a grin, but I don't think anybody believed him.

Sander said: "Well, whoever played that joke had better not do it again. Winthrop is a person of very precarious health. One more joke like that might have unpredicable results."

"Such as?" said Constant.

"Death, maybe," said Sander.

"What do you mean, Doc?" said Harry. "That was only a harmless little joke. A man's got to do something to keep from being bored to death."

"Not to Winthrop Fish, it wasn't harmless," said Sander.

May spoke up: "Guess you'd better tell the whole story, Ed. Only way to make these jokers realize just what they're doing."

Sander said: "Good Lord, I couldn't do that! It would be a professional indiscretion —"

"Ed!" said May. "You tell them! Harry's a pretty good pilot, but on any subject outside of space-flight he hasn't got one brain-cell to rub against the next. Got to spell it out."

"But that would be unethical," bleated Sander, "and would make me liable —"

"As leader I order you," said May. "Emergency. I'll take responsibility."

THEY ARGUED some more, but Sander gave in. Otis May can be a very compelling guy. So

Sander, looking unhappy, told us the tale:

"Winthrop Fish" (he said) "inherited one of the big American fortunes. His mother wisely put it in a trust-fund so he can't waste it — though he's not really extravagant, considering his opportunities. His father died several years ago in Olympia Sanitarium, near White Plains. Involutional melancholia, resulting in suicide.

"Winthrop also showed a disturbed personality from an early age. He was a borderline schizophrenic. That means he might go along for decades without doing any harm, but under heavy stress he'd have a schizoid break. Rich schizophrenics sometimes live out their lives without a single break, because their money cushions them against stresses."

Constant said: "You mean you're *that* kind of doctor?"

"I'm a psychiatrist if that's what you mean," said Sander.

"But you've been doctoring us like a regular — you know —" said Constant.

Sander said: "A psychiatrist has to be an M. D. first. Though he never got past the tenth grade, Winthrop did fairly well until he married in his late twenties. He married a prostitute — a real hard-boiled professional, with no heart of gold such as they sometimes have in fiction. She was out to get a slice of the Fish mil-

lions by any feasible method. She bore him one child and then the ménage began to deteriorate. She nagged him until he buried himself in books; she screeched at him day and night. I don't know if she was trying to drive him over the edge, at least on the conscious level, but that was the effect. He began to break; he got violent; she fled the house with the child. They had one of those complex and scandalous litigations. The tabloids had a saturnalia. In the end they were divorced, she got a modest settlement, and he landed in Olympia.

"He was showing hebephrenic symptoms —"

"What does that mean?" I asked.

"IT'S THE form of schizophrenia that results in silly, witless behavior. You know — the comical lunatic who's always laughing inopportunely; there were also unsystematized delusions.

"Now, hebephrenia has always had a poor prognosis. It quickly becomes aggravated and results in complete withdrawal from reality and disorganization of the personality. They end up with forced feeding, inability to control excretory functions, etcetera. But at Olympia we'd been working on a new attack, mostly chemico-therapeutic. We gave it to Winthrop, and soon his pat-

tern ceased deteriorating and began to re-integrate. After a year he seemed almost as competent as before the break, so we let him out of Olympia and put him back in his house. His mother had died and he suffered from solitude, but otherwise he managed.

"He'd long wished to back an interstellar expedition. He could well afford it, and one of the components of his stress is a feeling of worthlessness, because neither he nor his father had been able to complete an education or work at a regular job. Therefore I thought it would be a valuable therapy to let him do it, and would advance the cause of science —"

Constant interrupted: "You're telling me, Doc, that you'd send a looney on a dangerous expedition like this, just because you head-shrinkers think it might get him over some psychosis?"

"Well, that's one way to put it, but —"

"And *you* call *Fish* nuts!" Constant shouted. "Why, damn your eyes, if you aren't the biggest looney of all — risking our lives because of some fool psychiatric theory —"

May hollered: "That'll do from you, Harry. You're not making the policy of this expedition." Then everybody yelled at once.

May shouted the rest down and said: "Don't care who

thinks who is nuts. I'm telling you what you shall *do*. Want to complain about it, wait till we get back to Earth. Meanwhile, no more pranks, jokes, jests, japes, or any of that nonsense. On a strange planet like this, a practical joke is the most impractical thing you can do. You saw that this afternoon. I mean you too, Harry; understand me?"

Constant mumbled an agreement, and we broke up.

THINGS MIGHT have simmered down if Constant had had the sense to keep his mouth shut, but then he'd have been somebody else. Winthrop Fish was up late next morning, looking much the same but quieter. One of the crewmen had fried the bacon and went around the table in the main tent forking it out. Constant finished breakfast when Fish was just starting. Constant stood up, slapped his big belly, and said: "Don't give him that long piece, Walter; he'll think it's a snake and throw a fit." Then he laughed and went out.

Fish sat for three seconds as if he'd been turned to stone. Then he tore out of the tent after Constant. I heard him scream: "So it was you, you bastard!" and then the sound of fists.

We all rushed out pulling our hoods on. There was Harry Constant lying in the mud with his face bloody, and Winthrop Fish

standing over him shouting: "Get up, you gaw damn swine!"

Fish's knuckles were bloody too. Constant outweighed Fish by twenty or thirty pounds and was younger, but Fish was too fast for him when he got stirred up.

CONSTANT GROANED and sat up. One punch had flattened his nose and another had cut his lip. That was where the blood came from. He stuck a hand inside his hood and felt around in his mouth. Then he mumbled: "By God, you broke one of my teeth! I'll kill you for that!"

He started to get up, but everybody grabbed the two of them and pulled them apart. May said: "If you don't call it off, as leader I'll have you both tied up. Now cool down. Apologize, both of you: one for the joke and one for the hits!"

There was a lot of growling of threats and insults, but in time they calmed down and even shook hands. Sander took Constant into the medical tent to fix his face.

A few hours later I was surprised to see Fish and Constant in what looked like friendly conversation. Fish said: "Gee, Harry, I wouldn't have busted your tooth for anything. I only meant to give you a couple of little lumps."

"Guess you don't know your own strength," said Constant.

"Yah, that's right. Tell you what. As soon as we get back, you go to the best dentist in New York to have bridgework put in, and charge it to me. Whaddaya say, huh? Please, promise you will."

I didn't catch Constant's reply, but then he spoke in a normal voice while Fish always either shouted or talked in a conspiratorial whisper. But Constant seemed to be grinning through his bandages.

FOR A couple of days the scientists got ahead of me, so I was too busy with records to keep track of Winthrop Fish. I did notice that Harry Constant seemed more bored and restless than usual, getting in the scientists' hair and asking silly questions.

One morning I saw Harry Constant, Winthrop Fish, and Phil O'Sullivan all going out together with a rifle and a shotgun, much as Fish and I had gone out a few days before. I went about my business and didn't know anything more until a couple of hours later, when these three appeared running madly towards the camp.

All I know about this collecting-trip is from the stories of those who were on it, mostly the story of Phil O'Sullivan.

It seems Constant got O'Sullivan aside that morning and suggested a wonderful joke on

Fish. O'Sullivan was dubious, in the light of Sander's revelations and May's orders, but Constant could talk him into anything. I don't know how much this stunt was motivated by Constant's broad sense of humor — sadistic sense of humor, I should say — and how much by the wish for revenge.

The first step was to steal one of the phosphorus-grenades from their box in the equipment-tent. Of course May had said those were to be saved for emergencies, but a little thing like that never stopped Harry Constant. They'd follow the isthmus between the two lakes in front of the camp and go on to the nearest branch of the Beebe. There, there was a kind of dome of mud that some of the little amphibians had built as a communal nest. Constant would point that out as a colony of the deadly naupreda. Then he'd throw the grenade at it and yell: "Run for your lives! They're swarming out! They're headed this way like a million slimy snakes!"

Fish would fall into a panic and race back to camp yelling the alarm, while the other two followed at their leisure and laughed themselves sick.

UP TO THE point of throwing the grenade, everything worked out. What the pilots hadn't noticed was that about five yards from the mud-dome

was a *real* colony of naupredas, the spherical membrane that forms around the colony just showing above the water like the back of a whale.

Constant threw his bomb and yelled: "Run for your lives! They're swarming — by God, they *are* swarming! This is no joke!"

The grenade went off with a big burst of streamers of white smoke. A lot of particles of phosphorus struck the membrane, burned through it instantly, and aroused the naupredas, which were probably getting ready to burst their bag and set out on a march anyway. In ten seconds the swamp was alive with thousands of wriggling naupredas, from babies a couple of feet long up to oldsters of fifteen or twenty feet, all writhing along and opening and closing those three-cornered mouths.

The other animals instantly changed the tune of their grunting and croaking and squeaking, and the swamp came alive with slimy wrigglers and crawlers and hoppers, all getting away as fast as they could.

The three men took one look and ran. On hard level ground a column of naupredas would be easy to run from, as they don't go faster than a fast walk. But on Suomi, where you sink up to your knees every few steps, or fall in a hole full of water, or have to climb over or squirm

under fallen trunks, and push through clumps of giant reeds, it's something else. When they were halfway to camp, O'Sullivan, being last, looked back and saw that the ribbon of wrigglers, three or four yards wide, was gaining. He dropped the shotgun to make more speed. Constant was number one with Fish close behind him.

Then Fish, who had the rifle, stopped and waved O'Sullivan past him. He panted: "Gwan — I'll shoot — rouse camp . . ."

O'SULLIVAN was too terrified to argue. Fish began shooting at the leading naupredas as fast as he could work the bolt. It didn't bother the naupredas, which are such a low form of life that you have to be awfully lucky to kill one with a rifle-shot. But the shooting roused the camp.

Everybody dropped what he was doing. The croaking and chirping of the animals seemed louder than usual. We were all looking at the woods beyond the isthmus when Constant and O'Sullivan ran out. As they got closer they waved their arms and shouted, but were too short of breath to say anything we could understand.

They were halfway across the isthmus when Fish appeared. He'd dropped the rifle when he'd emptied the magazine, and now was gaining on the others



fast, so they reached the camp only a few jumps ahead of him. I never saw a man run so strongly, especially through mud in heavy boots.

Constant went right through the camp. He shouted something and kept on towards the ship. O'Sullivan stopped long enough to say to May: "Naupredas coming. — come to the ship — lock ourselves in . . ." Then he ran on too.

We looked at one another. If this were another of Constant's jokes we didn't want to be taken in, but if naupredas were on the way we didn't want to abandon the camp to them if we could help it. Even if we got to the ship, they'd swarm over everything and eat our specimens, and what they didn't break or upset they'd cover with slime. The electrified fence wouldn't stop a swarm like that.

BEFORE WE could make up our minds — not more than a couple of seconds, really — Fish ran into the camp. This time he jumped over the electrified fence. He ran to the equipment-tent, skidded on the mud, and came out with his arms full of the carton of phosphorus-grenades.

We weren't looking at him because a swarm of minor slimy things had come out of the woods. Some plunged into the lakes while others scuttled and hopped along the isthmus towards us. Behind them came the column of naupredas, wriggling along like some horrible living carpet. Whenever a naupreda caught one of the little wrigglers it would halt to gulp it down while the others flowed over and past it. The column followed the isthmus towards the camp.

The camp burst into action. All the scientists ran for the specimens and instruments they most valued. The crewmen lit out for the ship. May and Sander rushed into the equipment-tent and lugged out the flame-thrower.

Meantime Fish, leaping over the fence again, ran back to the isthmus, yelling: "Gaw damn sissies! I'll show 'em!" He got to where it narrowed, so the naupredas couldn't get past him unless they took to the water, and in their marching stage they prefer land. May, lugging one

end of the flame-thrower, yelled: "Winthrop! Come back! You'll be killed! You're in the way!"

For, May couldn't spray jellied gasoline from the flame-thrower with Fish right between him and the column. Fish gave no sign of hearing. Instead, he set down the carton and picked up a grenade. He threw it at the naupredas, about thirty feet away. The little hoppers and crawlers scuttled past his legs.

The grenade didn't go off. He threw another, which didn't go off either. May groaned: "He's not pulling the pins!"

And so he wasn't, because May had never shown us how to work the grenades, and he hadn't shown us for fear Fish would start experimenting. Some of us had an idea how these bombs worked without having to be told, but not Winthrop Fish.

WHEN HIS second bomb failed to explode, I guess he knew something was wrong. While the naupredas swarmed nearer, he picked up another grenade and turned it over. He had his back to us so nobody got a clear view. MacAuliffe the meteorologist was off to one side and says he saw Fish pull the pin from the grenade, fumble with the bomb, and drop it into the box at his feet. Some thought he might have done it on purpose, as the naupredas were so close that a phosphorus burst on

the head of the column would have gotten Fish, too. But I think he was just being his usual disorganized self.

There was a terrific explosion, not all at once, but taking maybe half a second, *br-r-r-oomp!* like that. The whole isthmus and Winthrop Fish disappeared in a huge white cloud of phosphorus-trails. Some of the burning phosphorus fell inside our perimeter, though nobody was hit.

The wind carried the cloud away, and the sputter of burning particles of phosphorus that covered the ground from the camp to the other end of the isthmus died down. The far end of the isthmus was covered with burned naupredas, some writhing and others dead. At the edge of the woods, where the rest of the column was still streaming out, the leaders halted at the smell, so they piled up in a great writhing mass. Then the column turned and streamed off along the far shore of one of the lakes.

We never did need the flame-thrower. The naupredas kept on away from the camp, and we never saw that swarm again. There was hardly enough left of Winthrop Fish to bury. Sander said that, while a phosphorus-burn is one of the most painful injuries, Fish probably didn't have time to know he was hurt.

[Turn to page 120]

JAMES BLISH
and
MICHAEL SHERMAN'S
"The Duplicated
Man"

A Review in Verse
by Randall Garrett
(who also committed the art work)



This particular story we've got is
A novel that no one should
miss.
I'm not sure I know what the
plot is,
But I think it goes something
like this:

There's some people on Venus
bombarding

The Earth with some rockets
and stuff,
And the people of Earth are re-
garding
The whole situation as rough.

The hero's a fellow named Dan-
ton,
Who belongs to an under-
ground league —

From Singapore, China, to Scranton,
They have woven a web of intrigue.

This Danton is clever and smart;
he
Is trying for all he is worth
To help this so-called Pro-Earth party
Throw over the rulers of Earth.

Meanwhile, upon far-away Venus,
We find there's another big plot.
(And somewhere in here, just between us,
The tale gets confusing, somewhat.)

Now let's see: The Venusian boss is
Named Thomas — a fat, heavy slob.
He must watch out for sneak double-crosses,
Because everyone's after his job.

Well, anyhow, this guy's immortal,
In spite of his oversize build.
And, according to every report'll
Keep living; he can not be killed.

At the same time, elsewhere on the planet,
A group of conspirators meet,
And the whole bunch agrees to a man it

Would be real nice if Thomas got beat.

And while these two factions are wrangling
As to which one is gonna be boss,
Back on Earth, the Pro-Earth Party's angling
To throw Earth's bigshots for a loss.

The Security Council, who govern
The Earth, have decided to act.
Their agents go out and discover n-
Ew dope on a fantastic fact.

It seems that young Danton, the hero,
Found a big Duplication Machine.
But his future is practic'llly zero —
The poor boob don't know he's been seen.

The underground party intended
To duplicate bigshots galore,
And in the confusion attended
By this, they would make a big score.

But their plans are completely confounded
And all their finagelings flop;
And they're all absolutely astounded
To find one of their guys is a cop!

So Danton gets tossed in the lock-
up,
Along with the rest of the boys.
And this is somewhat of a shock,
up-
Setting all of his plans and his
poise.

Back to Venus the scene now is
moving —
Boss Thomas has just gone
through hell;
He's recovered from poisoning,
proving
His body is sound as a bell.

Says Luisa, his gal, "What's the
answer?
How is it you didn't drop
dead?"
Thomas, grinning, says, "Well,
I've got cancer;
"But the secret I'll keep in my
head."

And now, back to Terra we're
shifting.
(This tale bounces all over
space.)
The Council's discovered by sift-
ing,
That Danton has just the right
face.

"There's a fellow on Venus,"
they tell him,
"Who looks just exactly like
you.
"Your job's to replace and expel
him —
"About five or six Dantons
will do!"

Back to Venus! The boys are be-
ginning
To start an invasion of
Earth.
While on Terra, young Danton
is twinning,
In a sort of mechanical birth.

The machine gives a *pop* and a
buzz, un-
Derlined by a couple of *clicks*.
Five new ones—almost half a
dozen.
With Danton himself, that
makes six.

One duplicate's killed by the
Party;
Two more leave the Earth,
Venus bound,
While the other two, still hale
and hearty,
Decided they will stay on the
ground.

The Original Danton smiles
slickly:
"I don't see what *I'm* needed
for!"
So he marries the heroine
quickly,
And we don't see him much
any more.

But the story just keeps right on
going;
Back to Venus we leap once
again,
Where it's hot, and the sand-
storms are blowing.
The scene opens here with
three men.

Two Dantons and one small policeman

Figure out how the boss can be downed,

While Thomas, that sly and obese man,

Is plotting things deep underground.

With a slam and a bang, starts the trouble.

(The authors do this part up brown.)

One Danton replaces his double,
While the other one sneaks around town.

But it's more complicated on Terra. R-

Emember? There's *three* Dantons there!

And the old Pro-Earth Party, in error,

Picks up one of the duplicate pair.

While, on Venus, the joint's in a tizzy;

Two Dantons and one Captain Small

Know the double's suspicious — or is he?

I don't think they're quite sure at all.

And on Earth, the Security Council

Hopes the underground doesn't arise.

Having trouble in such large amounts'll

Amount to a dismal surprise.

And on Venus — Now *wait!*
Let's determine

Just what's taking place there-upon!

Oh, *please*, Mr. Blish, Mr. Sherman,

Just what in the hell's going on?

At the end, the entire situation

Is tied up all neatly, somehow.

Every bit of the plot complication

Stands in order to take a big bow.

Friends, with logic this tale is abounding.

It's a good story — make no mistake.

It's a classic; it all ends up sounding

Like a passage from "Finnegan's Wake."



There had been numerous theories about just what had happened to the dinosaurs, but this man knew!



LABOR OF LOVE

by Wallace West

“THIS PLACE sure is dead tonight,” said Eddie as he mopped a splash of milk off the Formica bar and stared across empty, glistening Pennsylvania Avenue. “Dead as a dinosaur in the rain.”

“Most people hate rain,” said the little man in the derby hat who was munching a hamburger near the window. “An ancestral

memory, perhaps. Why, I remember that when it started to rain like this in the Fall, President Wilson would pace the floor all night. Sometimes he’d quote that poem by Swinburne that goes ‘Rain and a ruin of roses.’ ”

“You remember President Wilson?” exclaimed the messenger boy who had been dawdling over a malted.

"Yes, and I always sleep with my long white beard *outside* the covers," said the man in the derby. "Fact is, I've been working in the White House library so long that I even remember President Cleveland."

"Never was a President named Cleveland," cried the boy. "That's a burg in Indiana!" To show his disapproval of such loose talk he picked up his package and plunged into the storm.

"How long *have* you been at the White House, Mr. Smith?" Eddie asked as he "hotted up" the little man's coffee.

"You've noticed how many Smiths there are in the world, haven't you. Well, I fathered the whole push of them since I took my present job."

"That wouldn't take *too* long," the counterman grinned. "I read somewhere that Adam and Eve had 20 million descendants within 400 years after they had been . . . mixed."

"Probably an over-estimate," said Smith. "Cain murdered Abel, remember, and thereby cut off one probably prolific branch of that family tree. But tell me, Eddie . . ." He smiled at the gangling, freckle-faced youth with the fiery red hair and pantomimed his need for another hamburger, "where do you pick up all the strange bits of information that you dish out every night with your short orders. You mentioned dinosaurs dead

in the rain, for instance. What do you know about them?"

"**N**ASTY DEVILS!" The other poked his fork savagely at the piece of meat he had put on the grill. "Ugly piebald hides. Evil little heads on long snake necks. Eyes yellow as sulphur."

Rain thundered on the diner's tin roof. A taxi's tires squealed.

"Rain just like this the night we landed," Eddie said at last.

"Only it was hot and steamy . . . Here's your 'burger, Mr. Smith. Medium well, just the way you like it. Better'n nectar and ambrosia, let me tell you. Take your time eating it. I get fidgety when I'm alone on nights like this. Reminds me . . . Say, you think the Senators ever are going to win a pennant?"

"Everything happens if you give it time," said the librarian.

"Yeah? Like in an infinite universe anything you hope for will come true in the end?" Eddie asked.

"There you go again. Where did you pick that idea up?"

"Oh, I read science fiction some, when business gets slow. And I won a set of Britannicas on a TV show once. I read it when I can't sleep."

"Then you do know what caused the dinosaurs to die out."

"I know what people *say* killed 'em," Eddie hedged. "The Britannica article says the glaciers came down, and it got so



cold they either froze or starved. Another fellow says little animals ate the dinosaurs' eggs. Russian chap I read had the notion a flareup of the earth's radioactivity baked 'em. Somebody once wrote a story about how little dinosaurs learned to make guns to defend themselves from big dinosaurs. By the time they'd killed off the big ones, the little ones had become so bloodthirsty they started killing one another.

"That was a lot closer to the truth than those other guesses, but it still didn't hit the mark. The real reason they died is . . ." Eddie stopped short, almost swallowing his Adam's apple in the process. "But who cares about dinosaurs? What I want to know is, will Notre Dame do it again."

"Did you ever try to write stories, Eddie?"

"WHY, YES, SIR. Once or twice. Never sold one, though. A Mr. Poe, who was

editor of *Graham's Magazine*, tried to help me once. He told me I made up good plots but that I squeezed things together as though I were going through history on horseback."

"Was that Edgar Allan Poe?" Smith asked.

"I forget his first name."

"Tell you what," said Smith. "I've written some fiction . . . and sold it, too . . . but I'm not much on plots. I come in here practically every night, so why don't we collaborate? You give me your plots. I'll pad them out."

"Swell." Eddie's pale blue eyes danced.

"How about something historical for a starter . . . about Peter Stuyvesant, maybe?"

"Old Peg Leg? If I told the truth about that stupid windbag nobody'd believe a word of it."

"Then let's tackle a dinosaur story," Smith hinted.

"I'm no paleo-what-you-may-call-it." Eddie polished the bar lazily. "What do I know about those stinking, squealing critters?"

"You know that they stank, squealed, and had piebald skins and yellow eyes. That's a lot."

"Oh, all right. You win. Here's a story I started to write once . . . Let's see . . . How did it go? Oh, yes . . . We landed on a rainy night like this, only it was hot and sticky, like I said, and volcanoes were spouting like

fireworks, far as you could see.

"Before captain could get the airlock open, something hit our ship a wallop that almost knocked it off its landing gears. I was making supper and that jolt slammed me against the galley stove. See?" Eddie rolled up a sleeve of his not-so-white jacket and showed a long, jagged scar. "Atomic burn; never has healed right."

"Too bad." Smith got out notebook and pencil. "Tell on."

"**W**ELL, WHEN we got outside there's this big devil . . . brontosaurus, you call it . . . standing almost as tall as the ship and just about to give it another belt with its tail. We had to burn it practically to molecules before it would stop kicking.

"That's an advantage those stinkers had, you know. No brains to speak of in their heads, but little pieces of brains scattered all around in their bodies and hooked up with nerves, like the servo-motors on a bomber. You had to kill every one of those brains before your saurian would stay dead. And, if you let 'em all get to functioning at once, better watch your step.

"Well, the next morning we went exploring through the jungles and the swamps. Know what we found?"

The door flew open to admit a deluge and a big man in a

slicker who tossed a soggy armful of morning newspapers on the counter.

"Twenty-five, Eddie," he shouted. "O. K.?"

"O. K., Hank. How about a coffee?"

"I'm 'way behind schedule, but thanks." Hank sprinted for his idling truck.

"What did you find when you went exploring?" Smith prodded gently.

"What? Oh." The counterman turned regretfully from a sports page. "Why, we found that, when the brontos, tyranos, and other assorted saurians weren't stuffing themselves on vegetation or one another, they went around stepping on things."

"Doing what?"

"Stepping on things . . . little hopping things; 'bout as big as rats."

"That doesn't make sense, Eddie."

"**S**URE IT *does*. Write it down. I told you the squealers weren't so dumb when they got all their brains ticking. Those hopping things were the world's first mammals. They weren't so dumb either, and had been *trying* to get rid of the dinosaurs by eating their eggs. But the dinnies finally had got onto 'em. Now they used all their spare time to stomp their enemies right into the ground. Since most of them could step

or jump more than 20 feet, that wasn't hard to do. The hoppers were taking a real beating. Even when they learned to climb trees, or to hide in holes between the rocks, those little snake heads could get 'em."



"Tough!" Smith felt his scalp crawl faintly.

"Yeah. That is what Captain thought, too. And, since all of us in the crew that trip happened to be mammals, we voted to do something to help the hoppers. So we got out our flit gun..."

"Flit . . . gun . . . ?" Smith snorted.

"Well, it was something like one. We pumped chlorine, sulphur and other poison gasses out of the nearest volcano. We added an inhibitor that kept the gas six feet or so away from the ground. Then we started spraying. Took us quite a while. But we have plenty of time."

"It was a labor of love," Smith suggested.

"That's a good title. You might write in, too, something about how us mammals got to stick together in this highly competitive free enterprise galaxy."

"WHEN THE dinosaurs were just hunks of stinking meat out in the endless rain, Captain said somebody ought to stay around for a while to help those hoppers get off on the right foot. We were going to draw lots, but Captain couldn't spare Astroga-tor, or Engineer, or Physicist, and on down the line till no one was left but Cook. So here I am!" Eddie removed his white cap and bowed grandly.

"Not bad at all!" Smith scribbled. "And how did you make out?"

"All right, after I got the hang of being at the right place at the right time, like now. 'Course, it was lonesome until I knocked the idea into the heads of some of the hoppers that it would pay them to walk, talk, and look like me.

"Hardest job, I guess, was teaching the little fellers to eat good nourishing hot cooked meals. They actually preferred nuts and berries till I convinced them they'd always be runts if they stuck to that kind of garbage."

"What did you teach them to eat, Eddie?"

"Why, the only stuff fit to eat: Hamburgers, hot dogs, potato salad, baked beans, vanilla ice cream, apple pie. They already had a taste for eggs."

"How do you account for chop suey, or Crepes Suzette?"

"I just haven't had time yet to educate *everybody*," Eddie grinned.

"A nice punch line." Smith put away his notes. "This will sell when I polish it." He got out an old-fashioned change purse preparatory to paying his bill.

The door blew open once more. A red-haired, freckle-faced girl in scarlet sou'wester, helmet, and boots, stuck her dripping head into the diner.

"Ready, Eddie?" she asked.

"Sure am, Captain; I thought you never were coming back."

The counterman reached into his locker, brought out an umbrella with a broken rib, and headed for the door.

"Hey!" Terror gripped the librarian. "Where are you going?"

"Home," said Eddie.



Impractical Joke

(Continued from page 110)

CONSTANT AND O'Sullivan came down the ship's ladder and back to camp. To give them credit, they at least acted ashamed. They'd run, while the poor nitwit they'd been baiting died like a hero. I'm sure we all thought somebody ought to beat the tar out of them, or at least out of Constant, but as he was the biggest and strongest man in the party, nobody did. For that matter I think some of us wouldn't have minded a little quiet murder, only without the pilots how could we get back to Earth? We couldn't even fire

them when we got home, as their contracts ended at that time, anyway.

As Kurt Maier remarked in Constant's hearing: "Even if he was a looney, I *liked* him. Better than some decidedly saner people."

And Radek added: "But can a man be sane who plays a joke on a psychotic, after he's been warned?"

Anyway, darling, that's why I won't take a practical joke. Ever. Here we are. Kiss me good-night and try not to be mad.

READIN' and WRITHIN'

BOOK REVIEWS
by Damon Knight



GOOD AS GOLD, by Alfred Toombs (Crowell, \$3.50) has one of those ideas that start you laughing before you even begin the book: a backwoods scientist discovers a substance that will turn gold into dirt.

The "dirt," a by-product of atomic research, turns out to be a miracle soil conditioner, producing, as the story unfolds, monster grass blades, cacti &c. Its discoverer, John Henry Johnson, is a natural football for all the varied pressure groups of Washington, D. C.: so away we go, from one expertly contrived situation to another, and from wisecrack to wisecrack. And

gradually you discover that it's becoming an effort to hold your face in that grin.

It's hard to say why. Toombs writes uncommonly well; he knows his Washington; his characters are sharply drawn and fairly crackle with eccentricity; his situations are as novel as you could expect, and his gag-lines are funny. Except for the sex, in fact, this is almost like a good Thorne Smith novel . . .

Just so. Except for the sex: which in Smith's work was not just a kind of bawdy icing on the cake, but the essential ingredient that gave it weight and solidity.

The word for a sexless farce like this one — which bored me to distraction, I couldn't finish the damned thing — is "sterile." Of course.

REPRIEVE FROM PARADISE, by H. Chandler Elliott (Gnome, \$3.00) is an eloquent, muddy, perplexing first novel. The background, which involves a world-wide Polynesian culture dedicated to "breeding and feeding," is complex and intimately detailed; the satire, a funny-revolting extension of modern popular culture (love ballads and all) into a Way of Life, is wonderfully sharp. The style varies from a kind of heavy colloquialism ("*This was it!*") through a kaleidoscope of elaborate awkwardness ("And his unfledged mind had found her a road to flaming revelation" . . . "The face of the woman, seated on a couch" . . .) to an occasional unexpectedly vivid image:

The inhuman beauty of sky and hills was being swallowed in a living darkness, a cloak flung across the sky and swirled westwards as it lagged behind the wheel of the expanding latitudes that ringed the pole.

The plot takes Pahad tuan Konor, an instructor at the last of the great Universities, through

a series of misadventures as predictable as they are unlikely — the standard beautiful spy, murder plot, stolen document, and so on — to a rebel utopia in the Antarctic, which turns out to be surprisingly convincing and desirable.

The hero, invincibly stupid like all his kind, fails to see what is under his nose and the reader's for ten long chapters; betrays the rebels to his own people; realizes his error at the last moment and has to turn traitor all over again, before the story can wind itself up in the usual rosy manner.

Two things, it seems to me, keep this story from coming to life for longer than a page or two, in spite of a carefully built framework, good character drawing, convincing scientific details and many other virtues: First, like nearly all the rest of the modern stories built on what Heinlein calls the "Man Who Learned Better" theme, this one fails on the question of guilt in apostasy. The hero switches sides — although so tardily that you want to kick him — as easily as a man crossing the street: and his realization, after the second betrayal, that he can never give himself wholly to any society, is admirable but comes much too late.

Second, I'm afraid, Elliott has simply bitten off more time than he could chew. The farther fu-

tureward a story goes, the more thoroughly divorced the imagined society gets from anything we now know, the harder it is for the author to bring his story to life. At any rate, the liveliest and most convincing episodes in this book are not those which belong to the far future of the story proper, but those which date much nearer the present, and are experienced by the hero as a kind of super-movie — a "neurreson" — merely to fill in the historical background.

The standard love story in this adventure novel is as flat and lifeless as usual; but it's only fair to add that Elliott's notion of love goes — a refreshing novelty — beyond clichés: the

delicate, entirely innocent relationship between the hero and Elisis, an adolescent rebel girl, is a delightful thing.

VAUGHAN WILKINS' "Valley Beyond Time" (St. Martin's Press, \$3.00) is a peculiar product of eclecticism, put together from ill-matched pieces of this and that, some of them quite beautiful, some very odd. It has a long waggie-tailed plot with its back broken in several places, a cheerful gang of mutally incomprehensible characters (some of whom speak what Wilkins takes to be the American language), and many other bright-colored anomalies.

The first chunk is a perfectly

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ordinary puzzle story about a man who vanishes on the isle of Caldy and reappears seven years later, having been gone (as he thinks) only a night; this is complicated only by the fact that two of the characters — Senator Benaiah Purvis and his secretary, Silver Honeyhill (*boo boy!*) — are supposed to be Texans, while the rest are almost desperately British.

"You know almost enough to send us to the lunatic asylum, Mr. Furrow," said Sir Henry, "so you may as well know that Miss Honeyhill's chauffeuse is in reality Lady Diana Belcombe, eldest daughter of the Duke of Cumber. She is the only child of his first marriage."

"Good God!" exclaimed Mr. Furrow, obviously more shaken by this revelation than by any fourth-dimensional adventures.

It was at this point that I first noticed the book had turned into a P. G. Wodehouse novel; but while I was still waiting for the younger son to hide the diamonds in a flowerpot, the scene changed again, and the tone with it.

Now Purvis, "R. R." (the above-mentioned lady chauffeuse), and a young viscount answering to the name of "Midge,"

have all crossed the dimensional border into Elfhame, which turns out to be a silly world tinted pastel, like cakes of bathroom deodorant. Honest Celtic legend turns up here intermingled with astonishing bloopers, as when a local princess introduces Midge in turn to her mother, whose name is Branwen, and her horse, whose name is Arianrhod . . . both these names being those of Celtic love goddesses, and one being about as appropriate for a horse as the other.

Wilkins' style, incidentally, is fluent and colorful, with some rewarding things in it — like the delightfully horrid description of an American car on p. 75, or like this description of what it's like to pass through the dimensional barrier: "There had been but the sensation of a damp fluttering kiss, such as that of a bursting bubble. That was all." . . . But for the most part Wilkins' writing has the slippery, fluid feel of prose that has neither been forged nor tempered, but has only slithered out half-aware. A lot of it turns out on examination to be nothing but elegant clichés, like this flatulent passage from p. 80:

. . . So great seemed their isolation that it was as though they had reached the end of space and time and stood together — young

woman and small boy — on the very verge of nothingness, or, perhaps, eternity.

There follows a long bit all about the other world, which is one of those exasperating places where everybody talks like a cross between Longfellow and a wooden Indian, and you *wish* to blazes somebody, just once, would scratch his arse, or belch, or get a charley horse.

Then it turns out that Midge and his princess friend are going to be separated, so they escape together back into normal space. And, with a wrench, the story changes still again, this time to a really dismal tragedy. Our friends seem to have gone

into the other world for the sole purpose of returning with a jaundiced outlook on this one; and Wilkins bangs away at that one note, like the sound of a boot on a dented chamber pot, for what seems eternities. To his credit, though, he makes our civilization sound a thoroughly gloomy thing, full of the funereal ticking of clocks.

Then there's another mismatched slice of fantasy, this one a rather glorious battle in the Senator's half of the other world; then another sliver of tragedy, followed by the butt-end of the other-world fantasy to cap all. Senator Purvis and R. R., both transmogrified, have perished in the aforesaid battle, but Midge

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and his princess are reunited. Miss Honeyhill, who after marrying Midge's father, the Earl of Morfa, has turned into a wicked stepmother, is left behind, together with divers supporting characters, all wearing surprised wooden expressions, like puppets who had expected better of their creator.

I don't know what the author thought he was up to: writing an American fairy tale, maybe.

UNDER THE TRIPLE SUNS, by Stanton A. Coblentz (Fantasy Press, \$3.00) is a wild, heavy-handed 1930-style adventure story, which I can't honestly recommend to modern readers: but I think science-fiction writers ought to buy it and read it.

I'm speaking to you, from Doc Smith on, who have fallen into the habit of describing an alien city, on another planet, as if it were Manhattan seen through slightly cockeyed spectacles. There is a failure of communication, the expected article is not reaching the customer, when an s-f hero arrives in the metropolis of Ub-Gloob, on Sirius XII, to find that the only difference between it and New York is that the cars move faster.

In retrospect it's easy to see how the habit began: the slam-bang science adventure epic whose growth took place in the 30's would have been intoler-



ably slowed down if the writers had felt obliged to examine every new race and culture in detail. But it's easy to see, also, that the new convention was a betrayal of science fiction.

Science fiction exists to provide what Moskowitz and others call "the sense of wonder": in more precise terms, some widening of the mind's horizons, in no matter what direction — the landscape of another planet, or a corpuscle's-eye view of an artery, or what it feels like to be in rapport with a cat . . . any new sensory experience, impossible to the reader in his own person, is grist for the mill and what the activity of science-fiction writing is all about.

So: notice, once you have passed (or skipped) the wooden dialogue and stereotyped action of the early chapters, Coblentz's

notion of a city on another planet:

Concrete pavements? Rectilinear buildings, automobiles, street signs? Nope.

He was peering into an enclosure that hardly seemed an enclosure at all. Far above, at a height of thousands of feet, the gray cobweb ceiling curved like an actual sky. Though from without, it had looked opaque, from within he saw it to be translucent: the subdued and filtered radiance of the three suns penetrated it with a soft, even glow. . . . The walls were ribbed with thousands

of strands of some fabric that looked like bamboo and crossed it irregularly, and yet somehow gave the impression of branching supports, which likewise suggested a cobweb, curved and bent and twisted between the floor and the ceiling, with closely woven whorls and patterned spirals and platforms and slim long cables that swung faintly as if in an invisible current.

Coblentz's story unfolds itself steeped in the sunless gloom of this gigantic spiderweb tent — a vivid sensory experience that never was in the world before. Coblentz uses his background

Given infinity, and an infinite number of planets and good-sized asteroids, etc., every man could have a world all to himself, if he so wanted. Isaac Asimov tells of a distant future when just about everyone *did* so want, and the means for satisfying that want are available. But there's an unsuspected joker in this solution to the problem of "Living Space." Ed Emsh has done the cover.

If a great artist—a world-renowned composer—were revived by a distant future, could he continue his work, and complete masterpieces unfinished, or merely thought of? James Blish treats this question in a new short story, "Art Work."

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for an engaging but primitive satire about "social climbers" (the social status of the Ugwugs, the city's inhabitants, depends on their height above the tent's floor) and similar conceits; but it would have served equally well for a straightforward xenographic story, or puzzle, or mood story, or what you like. The point is:

If your alien planet is just like Broadway, or even just like Uganda, what the devil is the use of leaving Earth at all?

L EIGH BRACKETT'S "The Long Tomorrow" (Doubleday, \$2.95) is a startling performance from the gifted author of so much, but so entirely different, science-fantasy. Miss Brackett is celebrated among fans for her intense, moody, supermasculine epics of doomed heroes on far planets, all extremely poetic and fantastical, and all very much alike.

Her new novel takes place on Earth, about 85 years from now — two and a half generations after the atom war that destroyed the cities. The world, in almost a century, has healed over but never grown back. No longer half godless, America is chockablock with sects like the New Mennonites:

. . . Back in the Twentieth Century, only two generations before, there had



been just the Old Mennonites and the Amish, and only a few tens of thousands of them, and they had been regarded as quaint and queer because they held to the old simple handcraft ways and would have no part of cities or machines. But when the cities ended, and men found that in the changed world these of all folk were best fitted to survive, the Mennonites had swiftly multiplied into the millions they now counted.

Speculation as brilliantly sound as this no longer seems like speculation at all, but simple truth; and all this is as real, as intimately detailed and as warmly sympathetic as if the author herself had lived it. Here's young, flat-hatted Len Colter, for instance, just after he and his cousin Esau have seen a man named Soames stoned to death by religious fanatics.

Len turned his head and looked at Esau. He was crying, and his face was white. Esau had his arms folded tight across his middle, and his body was bent over them. His eyes were huge and staring. Suddenly he turned and rushed away on all fours under the cart. Len bolted after him, scrambling, crabwise, with the air dark and whirling around him. All he could think about was the pecans Soames had given him...

Just so, my God!

And here's Gran, who was a little girl when the cities were still there: "'Seems like this is the only time you see real colors any more, when the trees turn in the fall. The world used to be full of colors. You wouldn't believe it, Lennie, but I had a dress once, as red as that tree.'"

The book is full of similar poignant touches, each unexpectedly penetrating and absolutely right. Miss Brackett follows Len and Esau from boyhood through young manhood with such warm wisdom that you find yourself continually saying, "Yes, that's so . . . Yes, that's so! . . ."

Unhappily, as the story progresses, it seems more and more to support Koestler's assertion (paraphrased) that literature and science fiction cancel each

other out. Most of the book, particularly the early part, is compellingly written, but not speculative — communities just like this one were common not so long ago, and some, as Miss Brackett reminds us, still exist. Where the smallest flavoring of speculation is mixed in, as in the third passage quoted above, it heightens the effect; but increasingly, as the invented elements of the story grow more important, the vision dims.

Perhaps Koestler is right after all, and there's no help for it. At any rate, Miss Brackett has dealt conscientiously with the speculative element — a hidden town, now half-legendary, where the descendants of government scientists are trying to find a way to bring atomic civilization safely back. Two-thirds of the novel are occupied with Len's and Esau's search for "Bartorstown," and with the ordinary, miraculous, tragic things that happen to them along the way. And when they finally reach their goal, they find no Hollywood supermen dressed in chrome and black leather, but ordinary people, in a dismal shanty town, laboring desperately at a problem too big for them.

All the same, in spite of good craftsmanship and good intentions, somewhere along the line, all the reality has leaked out of the story. Miss Brackett's occasional sharp character sketches

are now all in the background; the foreground figures we now meet are totally unconvincing, and so, I regret to say, is Len himself. The story line, which had seemed to flow as naturally and inevitably as life, gradually begins to waver into the same stale old comedy of divided loyalties we have been through so often: having lost the drama, the author has fallen back on dramatics.

Like Wyndham's "Re-Birth," this novel illustrates a problem which science-fiction writers are going to have to solve before

long: how to write honestly about a mildly speculative future without dragging in pseudo-scientific props by the carload. The result will not be what we are used to thinking of as science fiction, but I, for one, don't care. The mildly speculative future is a legitimate area of interest for literature, and one that's so far been notably neglected. The future-tense novel, for want of a better term, may in time become as common as the contemporary and past-tense novels; but it will have to give up hiding behind the clichés of science fiction first.



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